ITEMS OF INTEREST.

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Thoughts from the Profession.

NICKEL AND PLATINA DISCOVERED IN CANADA.

Dr. W. Adams, of Whitby, Ontario, sends us this account of the wonderful find of these ores.

Had the news been heralded throughout the world that the precious freight of the sunken treasure-ships of all ages had drifted together at a place where men could go and take their pick of piles of gold and handfuls of glittering gems, it would not have meant more than the tale of Alladin-like discoveries coming from the Sudbury district, Canada. So marvelous were these stories of the sudden discovery of great wealth that the people naturally paid but little attention to them, for fairy tales have not much charm for a people whose every tradition, and whose constant experience, unite to teach them that wealth comes by hard work and not through the agencies of genii of the lamp and ring, or by gifts from fairy godmothers. Nevertheless, the more often the story is repeated, and the more fully the case is investigated, the more matter-of-fact and marvelous do the facts appear.

It is generally known that recent experiments made by experts in the making of ironclads and heavy ordnance have proven that the iron-plated cruiser is a mere card-board affair compared with what it might be if the armor plates were made of nickel-steel, that is, of steel with an admixture of nickel, and also that the playful fashion that great guns have of bursting and carrying the fragments of themselves and the people who operate them to indefinite distances may be checked, if not wholly overcome, by using metal of the same kind. This putting of good material into engines of destruction is a poor business at best, but the governors of the world find if it is to be done at all they must keep up to the times, and so they have begun to look over their resources with a view to purchasing an outfit

of the new material. Since the "wooden walls of England" have been blowed out of the water or relegated to undignified obscurity as hulks, Iron has been king in the armaments of the world. He still reigns, but his sway is disputed, and if he is to retain his throne, it must be by taking the beautiful Nickel for his queen, and sharing the throne and sceptre with her. Unless some new and unheard of invention revolutionizes modern industrial methods, iron with nickel must hereafter be used where density and power of resistance are required.

But the question present in the minds of those who desire to take advantage of the new facts which science and experiment have revealed is, Whence the supply? Though nickel became known in 1751, it was not until 1875 that much was found. And as the discovery was made in the French penal colony of New Caledonia, the French have till lately kept it to themselves. During the American war nickel was worth $2.50 a pound, now it is about 50 cents.

Three years ago ore was sent to New York from the Sudbury district to be smelted. The ore was believed to be valuable for its copper, and it was hoped that fortunes would be made in working the mines. The smelting process revealed the presence of nickel in very considerable quantities. The fact was reported at the time, and ever since the wonder of the nickel mines has grown.

An Official Investigation.—At its last session the Congress of the United States appropriated $1,000,000 to be used in making nickel-steel armor plates and ordnance. Before the expenditure of this money was entered on, the Navy Department took steps to make certain that the work would not be interrupted for want of supply of nickel. The Secretary of the Navy appointed two commissioners to visit the nickel-bearing district to investigate fully and report to him. One of the commissioners was Commodore Wm. M. Folger, Chief of the Bureau of Ordnance, the man who is charged with the responsibility of turning out the guns and armor plates. The other commissioner was Lieut. B. H. Buckingham, one of the most trusted officers of the department, as shown by the fact that he is in charge of the flagship Chicago, the leading ship of the navy. Lieut. Buckingham has special qualifications for conducting an investigation such as that committed to himself and his fellow-commissioner, for he accompanied Sir Charles Tupper, Canadian High Commissioner at London, and Mr. S. J. Ritchie, of Akron, Ohio, President of the Canadian Copper Company (proprietors of some of the best nickel locations), on an extensive tour through Europe, investigating the processes of manufacture for iron-clads now

carried on, and the present requirements for nickel. It may be stated in passing that these gentlemen found that the leading makers have orders on hand for material made of the nickel-steel, but these orders were not then being filled, because the nickel necessary for the purpose could not be found. Commissioners Folger and Buckingham reported to the department under date of October 14th, 1890. Their report is interesting reading for Canadians, as its cold, official language gives the most complete confirmation of the reports of untold riches in the nickel-bearing ores of the Sudbury district. The commissioners tell how they visited the district, and go into details of what they saw and learned. They make this statement as preliminary to the detailed report:—"We are fully convinced, from the surface indications and the shafts already sunk, that they have an amount of mineral which cannot be exhausted by this generation." The borings made and the shafts sunk are a mere nothing as compared with the immense quantities of nickel-bearing ore in sight. The fact that these officials should come to such a conclusion as they did gives some idea of what may ultimately be expected of this region. They go on to say that the deposits of nickel lie between walls of granite and diorite and are easily to be distinguished. This fact shows that there was absolutely no danger of the commissioners being deceived by mere surface indications.

TREATMENT OF THE ORE.—But not only is the ore easily distinguished, but it will be easily handled when branch railways are built to the mines. The report states that the country for hundreds of miles is broken by rocky ridges from 100 to 600 feet high, with bare rocks cropping out in many places and the rest covered by a thin soil on which are pine forests. "Between the hills are marshy valleys and numerous lakes and streams capable of furnishing abundant water power." And again:—"It is important to notice, from an economic point of view, that these ores can be smelted in their natural state, that is, they do not require the admixture of fluxing substances. The dead pine timber found in great abundance in the neighborhood, and which can be delivered at the furnace at $1.80 a cord, is a good fuel for roasting, though hardwood would be better, but owing to the fusible qualities of the ores and the intermixed rock it answers the purpose: Coke is hence the only material that has to be brought from abroad. This is procured from Pittsburg, and can be delivered at the works at $7 a ton."

The meaning of this is not quite clear to the uninitiated, but it is explained later in the report. The fact is, the rock when

blasted out is roughly sorted, so as to exclude those portions that are valueless. The ore is first "roasted," that is to say, the ore and dead pine timber are placed together in immense quantities, and the wood is set on fire. The effect of this roasting is to release the greater part of the sulphur, which rises in an immense cloud during the many days while the roasting is going on. There still remains about 7 or 8 per cent of sulphur. The ore thus purified is treated by a smelting process, and it is in this that the coke is used. The material which results from this process is known technically as "matte," and contains copper and nickel in varying quantities. The "matte" is exported to the United States, where the final process of extracting the fine nickel is carried on.

THE EXISTING WORKS.—The report goes to show that there are two companies now engaged in the work of mining nickel, the Canadian Copper Company and the Dominion Mineral Company. The commissioners visited the district in company with Mr. Ritchie, who gave them every facility for examining the locations and the mines. The other company also seems to have afforded every information.

THE MINES.—The properties of the Canadian Company are very extensive, and have the largest out-put. The commissioners devote separate heads of their report to the Copper Cliff mine and vicinity, the Stobie mine and vicinity, the Evans mine and vicinity, the Vermillion mine and vicinity, and the deposits in Creighton township. The place where the most work is being done is the Copper Cliff mine, which is situated within four miles of Sudbury, being connected with the Canadian Pacific system by a branch railway. The furnaces turn out about 60 tons of matte, which averages about 17 per cent of nickel and 23 per cent of copper. The mining is not confined to the surface, but has already been carried down a considerable distance. The ore seems to be as rich as at the surface, indicating that the resources of the place are simply boundless. One advantage of working underground is that operations can be carried on about as well in winter as in summer. In the biting cold of the winters of this region work in the open air would be tedious and expensive. The company has an excellent plant, and carries on the work now at a minimum of expense. The crushing capacity of the machinery already placed is understood to be about 1,200 tons of the crude ore a day. The company, it is stated, already has on the ground, and ready to set up, machinery which will bring the capacity up to 6,000 tons a day. The vicinity

of the Copper Cliff mine, as indeed the vicinity of all the others, is found to be exceedingly rich in nickel-bearing ores.

Is This Another Bonanza?—At the Vermillion mine a unique discovery has been made in the form of arsenide of platina, a metal hitherto very limited. The commissioners report that this new metal has been named "Sperryolite" by the Sheffield School of Yale University, in honor of its discoverer, Mr. Sperry. The metal is found by washing the sand, which yields 70 ounces of platina to the ton. No indication is given in the report of the value of this discovery. It is well understood that platina now is one of the most valuable of metals. Its refractory nature makes it exceedingly hard to produce, and at the same time makes it invaluable for use in electric lighting. The small supply and the comparatively large demand have run the price up till now platina ranks with gold in value. The sources of supply are various—Russia and the Pacific Coast, north and south of the international boundary, being the principal. The discovery of sperryolite may mean that the prolific Sudbury region will add another to the list of signal advantages which it confers on the world.

Still More Nickel.—The deposits in Creighton township have not yet been worked; in fact, they have hardly been seen by any except the prospectors on behalf of the Canadian company. The commissioners speak of these deposits as being "in size more striking than any we saw." It is understood that the company will soon build a railway to this location either from Copper Cliff or from the Canadian Pacific main line, with a view to beginning operations there also. The locations of the Dominion Mineral Company visited by the commissioners are the Blezard mine, the Worthington mine, the Crean mine, and the Murray mine. In these places also they saw work going on with indications of valuable nickel deposits. They report statements made to them that the nickel-bearing ore extends to the north indefinitely, but they do not undertake to speak as to the truth of these statements. The report closes with a summary in figures. They give an "estimate of tons of ore above the surface of the ground in deposits seen by us 650,000,000." These figures as they stand mean nothing to the ordinary reader; the mind cannot conceive the quantity thus indicated. It is an amount equal to five times all the iron that has been taken out of the rich mines of the Lake Superior District (American side) in the whole forty years of their working. If this ore were raised and shipped it would give more than three times as much freight as the whole of the railways of Canada have carried since the first locomotive began to run. The

amount of ore taken from the mines up to October 1st is about 175,000 tons. The daily crushing capacity of the machinery at work on the ground is about 1,750 tons, and the daily furnace capacity of matte is about 100 tons. With such a report the American Government may feel quite confident, and the world may share the feeling, that the question of the supply of nickel for armament or other purposes presents no difficulties.

SETTING A BROKEN JAW.

EDITOR ITEMS:—Having had a case of fracture of the upper jaw that was rather unusual, and having made a success of its restoration, I thought it might prove of interest to some of your readers to give them the treatment.

My patient was a young man of twenty years, who, while riding on an ox-cart, fell under the wheel, which passed obliquely across his face, fracturing the bones of his nose and the left upper jaw, badly bruising his face, but making no external abrasions. The accident occurred on a Friday. On the following Wednesday the attending physician called me in to examine his mouth, when I found the upper jaw broken on the left side in two places: the anterior fragment included from the left central incisor round to the first bicuspid, with considerable of the alveolar process and that part of the palative process from between the bicuspids across to the articulation of the two maxillary bones and posterior to the incisors of the left side of the mouth. The distal fragment included the remainder of the teeth on the left side of the mouth and the roof of the mouth over to the median line. The anterior fragment was displaced upward and outward, while the distal was drawn inward and downward. After examining the fracture I concluded to take an impression in plaster, which I accomplished with no little trouble, owing to the inflamed condition of the parts. After getting my model, by cutting it into sections, I was able to get a correct model of the normal condition of the mouth by articulating the sections to a model of the lower jaw. I then made a die and counterdie, and swedged up an aluminum plate to accurately fit over all the teeth, and also support the fractured portion of the roof of the mouth. I then made two pieces of vulcanite to fit over the lower molars and bicuspids, and thick enough to hold the plate in position, and, at the same time, to allow the patient to obtain nourishment. When I attempted to reduce the fracture I found the anterior fragment readily came into place, but it was impossible to put back the distal fragment. However, I got the parts

into place, as nearly as possible, and secured them with my plate, which, in turn, I held in place with my pieces of vulcanite; I then bandaged the lower jaw tightly against the splint, which was left in the mouth for three weeks, the mouth being cleansed, meantime, with disinfectants. On removing the splint I found the anterior fragment in place and firm, with only a slight discharge of pus above the lateral incisor; the other portion, however, was only partially firm, a perfect articulation being prevented by the upper second molar occluding with the lower tooth, and preventing occlusion of the anterior teeth by about one-fourth of an inch; there was also a fistula, above the second bicuspid, leading into the antrum. After syringing the fistulas with phenol sodique, I bound the lower jaw tightly against the upper, all the pressure coming on the left upper second molar. On the following day the occlusion was better, so I again tightened the bandage. In two weeks the distal fragment had become firm, and after I ground off the cusp of the upper tooth, the articulation was perfect, the fistulas having healed in the meantime. After a lapse of two months, my patient is none the worse for the accident, there being no dead bone and no deformity of the face.

Charles R. Pullen, Chesapeake City, Md.

HYPNOTISM IN DENTISTRY.

I see in December ITEMS an article on "Scientific Hypnotism." For the benefit of practitioners who may yet be skeptical in regard to the effect of hypnotism, I give the following account of an incident which occurred in my office a few days ago:

A young lady accompanied by a friend (a hypnotist), presented herself at my office for the purpose of having two fillings inserted: one cavity in a lower molar, and the other high up in the labial surface of an upper lateral. At previous sittings I had found her teeth very sensitive, and at this sitting, found the lateral exceedingly so. She decided to have but one filling—that in the lateral—inserted that day. When I was ready to begin the operation, the hypnotist presided over the patient for a few minutes, and the patient became, apparently, unconscious. At this juncture he insisted that both the cavities be filled at one sitting.

I proceeded to excavate and fill the molar, using a Bonwill mechanical mallet. I allowed the mallet to make no noise, whatever, till I had placed the point of the instrument firmly against the filling, and had the machine in rapid motion. I knew that if hers was a case of *feigned* unconsciousness, the first work of the

mallet, applied in the above manner, would make her give the hypnotic effect to the winds for an instant. But such was not the case. The filling was finished without a move on the part of the patient.

In adjusting the dam to the incisor, it was necessary to put the ligature high on the neck of the tooth. This ordinarily painful part of the operation produced no evidence of pain beyond a slight contraction of the brow for an instant, and I had no evidence of any pain whatever during the remainder of the operation. The patient walked from the operating chair to a rocker, and after about ten minutes she was restored by her captor. She spoke of an appointment for the molar; when told that no appointment was necessary, she would not believe the cavity was filled till she had made an exploration with her tongue. She said she felt no pain whatever, and that she did not even know that any operation was being performed. While under hypnotic influence, any request made by the hypnotist was immediately obeyed by the patient, while my commands were entirely disregarded. If the cork prop became disarranged, nothing short of a command given by the hypnotist would separate the jaws.

While I know that complete anesthesia was present, I do not know whether to attribute the cause entirely to the effect of hypnotism, or that the hypnotist being an embryonic "D.D." was endowed with any supernatural power, or that it was a powerful mutuality brought about by the fact that the two expect to pull together in double harness after the lapse of a few brief weeks. Each may judge for himself. *J. G. Lane, Philadelphia.*

THE SPHEROIDING OF AMALGAM.—There has been a great deal of talk about amalgam fillings spheroiding and bulging. I have never witnessed anything of the sort in my practice. I have been using amalgam freely in the practice of dentistry about thirty-five years, and have been so situated that I could inspect occasionally many of the fillings, and to the present time have no recollection of having detected anything like spheroiding or bulging.

—Dr. B. F. Arrington, Asheville, N. C.

[Neither have we.—ED. ITEMS.]

The next meeting of the Vermont State Dental Society will be held at Rutland, March 18th.

What shall I put on the programme as your exhibit? Please let me know at once. *T. Mound, per G.*

Comparative Methods.

From *Dental Mirror.*

Query: (1) *When proximal cavities extend below the gum border, how do you force the gum back?* (2) *How do you treat for the inflammation and pain?* (3) *Do you apply the dam, if so, how do you accomplish it; if not, how do you control the moisture?* (4) *With what do you fill the cavity?*

ANSWERS:

(1) By means of rubber-dam and clamp. (2) Dry the gum and paint a few minutes before the operation with a freshly made solution of cocaine 20 per cent. (3) I apply the dam in all cases. (4) Gold or gutta-percha.

J. Ashley Faught, Philadelphia.

(1) We go slow, take it easy up here in the country, and pack space between the teeth with cotton dipped in thin solution of oxyphosphate. It soon hardens, swells some, and does the business in about two days. (2) As no inflammation or pain is produced, no treatment is required. (3) Always apply the dam. If decay extends far down, follow the dam with matrix (specially made for the occasion from thin steel) and apply Perry separator to hold in place. (4) Always fill the cavity with whatever the case suggests to save the tooth. *Frank B. Darby, Elmira, N. Y.*

(1) Usually force gums back with ligatures and clamps; rosin and ether, or sandarac varnish holds dam and ligatures in place. By forcing oxyphosphate between teeth, allow it to harden. (2) Iodine and aconite, or iodine and glycerine. (3) Use dam. (4) Fill with tin and gold or by Clapp's method*; like copper amalgam in chalky teeth.

A. Eubank, Jas. H. Allen, Birmingham, Ala.

(1) By pressure with cotton moistened with oil of cloves, or eugenol, or oil of cassia, or campho-phenique, followed, if necessary, with "temporary stopping." (2) Proper utilization of above means *always* prevents inflammation and pain. (3) Never use the dam till after the cavity is filled up to gum line unless it can be done *absolutely without infliction.* I control moisture by napkining, using method No. 1, 2, or 3 right or left, as indicated, aided by bibulous paper or old fine muslin, if needed. (4) In my opinion fillings in such cavities should always be "guarded"—by means of *soft* gold, tin foil, gutta-percha stopping, amalgam; the remainder of the cavity to be filled in consonance with the guarding.

J. Foster Flagg, Philadelphia.

(1) With cotton. (2) Do not think cotton will cause inflammation or pain enough to be bothersome. (3) Use some form of matrix, generally one manufactured on the spot for the case, and then apply the rubber-dam, always. (4) If the cavity is in bicuspids or back of them, some first-class amalgam first, then the remainder of the cavity with gold. Front of the bicuspids with gold. Cohesive. *A. H. Gilson, Boston, Mass.*

* Dr. Clapp's method is to apply a matrix, fill lower half of cavity with amalgam, and then pack with Steurer's gold, until a union of gold and amalgam is produced, finishing with any gold preferred.—ED.

(1) I often require two sittings—first sitting, I force gum out of cavities with small pieces of cotton saturated with listerine and aconite, then pack the space hard and well with dry cotton; this swells and drives up the gum in 24 hours considerably, aconite preventing much inflammation. (2) I am charmed and enthusiastic over the pleasant effects of listerine and water, equal parts, for the after-pain of wedges and ligatures. When there is much inflammation, I use fluid extract of dogwood. (3) I use the dam when possible, and find many cases possible when I use binding wire for a ligature. This wire, about the diameter of a pin, is very pliable and soft. Cut your holes well apart in the dam and put on, then use this wire instead of silk or flax; if it will not pass between the teeth, thread it through at the necks, then twist the two ends of the wire with narrow, flat-beak pliers, shoving up on the inside, and it will carry the dam and gum up beautifully and hold far better and higher than any fibre ligature. (4) I use soft gold, hand pressure, when I can; it gives better results to me than any other metal, and when I cannot use it, I am very partial to gutta-percha.

C. Bunting Colson, Charleston, S. C.

(1) Separate teeth; partially prepare cavities; then pack entire space with gutta-percha, and leave one week. (2) None; time and nature will do that. (3) In filling permanently, use medium rubber-dam with silk ligature, which I find practicable in most cases. (4) Fill with whatever material your judgment dictates. *Hyman Roosa, Kingston, N. Y.*

(1) Packing with cotton (saturated with sandarac varnish), or gutta-percha. (2) Hot water, followed by listerine full strength. (3) Place dam on as in other cases, and force beyond cervical border of cavity, with matrix band cut to approximate shape of cavity at that point; this to be held in place by double wedges, or matrix clamp, like Marshall's. Strong solution of cocaine applied to gums will facilitate the operation. (4) Gold, tin, amalgam, or gutta-percha, according to condition of cervical border.

W. T. Martin, Yazoo City, Miss.

(1) With cotton rolled in thick chlora-percha, allowing it to remain a few days. (2) No treatment required. (3) No. Dry with hot air, paint with chlora-percha, use gutta-percha wedge if there is room. Use napkin of course. (4) Front teeth with gold, start with cylinders. For back teeth in difficult cases use guard filling of amalgam, fill with temporary stopping, and at next sitting use rubber-dam and fill with gold if desired.

S. B. Palmer, Syracuse, N. Y.

(1) In excessive proximate decay, when this has extended below the gum margin, I have produced an absorption of the gum, prior to the application of the rubber-dam, as follows: I wrap a piece of dental floss or gilling twine twice or more around the tooth, forcing this well up on the neck of the tooth, and filling the remainder of the cavity with red base plate gutta-percha, forcing this likewise well against the ligature. This will often be but an initiatory step. At the next sitting I will be able to see the condition of affairs better, when I may either repeat the procedure with the ligature, or force the gutta-percha between the teeth, crowding it well against the gum margin at the neck of the tooth. Sometimes *a little tongue* of gum extends into such cavities. I do not attempt the absorption of this, but

I cut it away, and when the bleeding has subsided, proceed as above. (2) This query is a little ambiguous. For inflammation of the peridental membrane, I treat with iodine and aconite, equal parts, bathing the gums around the affected tooth. I sometimes resort to massage, with good effect, rubbing the gums about the inflamed tooth with the end of the finger, until relief is obtained. If the inflammation comes from "pulpitis," I apply the dam, dry the cavity, and soothe the pain and the inflamed condition of the dentine by making a paste of acetate of morphia with oil of cloves: I take up this paste with a few shreads of cotton floss, and rolling this into a little pellet, apply it in the cavity, securing it in position with temporary gutta-percha stopping. The pain in these cases generally subsides at the expiration of an hour, or less. (3) I almost invariably apply the rubber-dam to all teeth that I fill; *invariably* when the decay is proximate. For all molar teeth I use a clamp, but for teeth farther forward, either in the upper or lower jaw, I use no clamp. If decay exist between a molar and a bicuspid, on either side, or in either jaw, I punch not fewer than three holes in the dam. The hole which encircles the molar tooth I make larger. Through this I pass the jaws of the clamp, and, folding the dam over the handles of the clamp-forceps, so as not to interfere with the view, I apply the clamp to the molar tooth. I then fasten the ends of the dam out of the way with the rubber-dam strap around the patient's head, and stretch the dam beneath the jaws of the clamp, using for this a ball burnisher bent at right angles. I then stretch the two other holes over the two bicuspids, and, forcing the septum of rubber between these teeth with waxed ligature silk, I ligate each of these teeth and place a knot on the inside, not merely to keep the dam from slipping, but because by the aid of this knot I can apply an instrument to it and force the dam well down on the neck of the tooth. I sometimes dispense with the clamps on the molar by passing the ligature behind the bow of the clamp, between the two molars, and under the jaws of the clamp, making quite a large knot in the ligature which rests on the lingual surface, and then tie tightly to the tooth on the buccal surface. Sometimes I apply the clamp to the molar *first;* and then by soaping the holes of the dam, it may be passed over the clamp without tearing. (4) In pain from pulpitis, I generally use a filling of phosphate of zinc or of gutta-percha. Where the decay exists as in query 1, I use gutta-percha, phosphate of zinc, or amalgam, according to the indication.

Theodore F. Chupein, Philadelphia.

(1) When necessary to force the gum back, I usually do so by filling the cavity with cotton saturated with a thick sandarac varnish, allowing it to remain a week or two. It is a mistake to hurry this part of the operation. If the cotton is removed after being in position a few days only, the natural tendency in the gum tissue to resume its position is a serious embarrassment. The cotton will usually remain in place and causes little discomfort to the patient. After the gum tissue has been held back some time, this tendency to immediately return to its former position is largely overcome. (2) This seems to apply to cases where the gum is forcibly pressed back immediately before the operation. This I do not do, unless the cavity is so little below the gum line that it can be accomplished in applying the rubber-dam. In such cases the irritation is so slight that treatment is rarely called for. (3) I use the rubber-dam if it can be applied without much discomfort

to the patient. In those cases where the cavity extends far below the gum line, I do not attempt to apply it, believing that often, by obscuring the cervical margin, it is more in the way than of service. Occasionally, when I desire to use gold for filling, I fill the lower portion of the cavity with amalgam, and at a subsequent sitting apply the rubber-dam and complete the filling. I have no set methods of controlling moisture, bleeding, etc., in the absence of the rubber-dam, other than those generally known and used, depending largely on rapid work and the judicious use of plastics. (4) I prefer, when admissible, especially for that portion of the cavity below the gum line, gutta-percha or amalgam.

William H. Trueman, Philadelphia, Pa.

I assume that the queries relate to cavities on the proximal surfaces of molars and bicuspids, and answer accordingly.

(1) Depending on circumstances, either a filling of gutta-percha, *properly placed*, to be worn for a few days or, cotton, dipped in a mixture of equal parts of oil of cloves and carbolic acid, pressed in the cavities sufficiently to displace the gum, and permitted to remain about fifteen minutes or, by the use of a matrix. (2) With *careful* handling inflammation is usually so slight that it requires *no* after-treatment. The unusual cases will commonly yield to a wash of menthol and benzoinol 20 grains to the ounce. The tannate of glycerine may be alternated with this, or used instead. (3) Commonly I apply the dam, and, if there has been proper preparation, there is no unusual trouble attending it. My method in these cases is, after the rubber is applied, to slip it under the margins of the gums with the aid of the suitably-shaped burnisher, or by a strand of floss drawn between the teeth. If this does not suffice, a matrix has always, in my experience, given complete control of the conditions. I rarely use ligatures and avoid wedges, in these cases, as I would wish to avoid his Satanic Majesty. The matrix which I have found most useful for the class of cases under consideration is that invented by Dr. Louis Jack. (4) Tin and gold folded together at cervix, finishing the filling with gold, or amalgam in combination with gold, or amalgam for the entire filling. Very rarely do I use gold alone, in these complicated cases. *J. W. Canaday, Albany, N. Y.*

(1) If gum be thickened or fungoid, after thorough opening up and separation, excise the gum, for the bleeding will deplete the congested condition, and the removal of the tissue will facilitate the operation. Then, with small perforations in the rubber-dam, apply over the two teeth between which the cavity exists. Ligature decayed tooth with number 18 binding wire, drawn with pliers securely and closely around the tooth, as when making a measurement for a gold crown; after which, with a small instrument, press and bend the wire entirely below the cavity of decay, which, if the wire be large enough and properly annealed, will be sufficiently stiff to form a compress on the gum, and prevent further bleeding or weeping. (2) As pain and disease are the result of the gum cutting against the sharp edge of the cervical wall of decay, the excision of the gum and the hemorrhage will prove a curative, especially if the filling be properly and thoroughly contoured to the level with the surface of the tooth. A ten per cent solution of freshly dissolved crystals of cocaine, painted on the gum, will prove a benefit before the dam is applied; or, if time will admit

two sittings for the patient, open up and separate the teeth, and excise gum at first sitting, and with a closely rolled pledget of lint, saturated with campho-phenique, press closely between teeth, till the gum is pushed out of the way; after three days the operation may be completed much easier. (3) Yes, and apply over the teeth front and back of the proximal space, using an ordinary clamp on the posterior tooth, and if the decay be on this tooth, I apply the ligature wire around it, with a silk floss ligature around the front tooth, and the reverse, if the decay be posterior of the anterior tooth. (4) Gold is always reliable, if the work is to be permanent, and it can almost always be used by cutting down the grinding end of the tooth, exposing freely to view the whole cavity. Contra-indications may justify cement, amalgam, or gutta-percha, as when applications of arsenic be applied for nerve destruction, when hermetical sealing is indispensable. If perfect security against moisture can be accomplished, the best material possible should be used, and gold would be my choice.

E. S. Chisholm, Tuscaloosa, Ala.

(1) Either by packing with cotton, or by driving a wooden wedge as high up as possible. (2) Cocaine and tannin. (3) I have never been successful in applying the rubber-dam; use napkins and absorbents. (4) Usually with amalgam, gutta-percha, or tin. *E. B. Davis, Concord, N. H.*

(1) By forcing the gum back with cotton, making two sittings for the operation, or by cutting away at once. (2) Don't treat much; use cocaine on the gum. (3) I do, and do not, use the dam, as the case may be. (4) Soft gold for cervical wall, and cohesive gold for finishing, or gutta-percha for cervical margin and amalgam.

W. R. Blackstone, Manchester, N. H.

(1) By a hard ball of cotton and sandarac varnish, I press firmly between the teeth and into the cavity, compressing the gum, producing absorption, which it will do in a few days, in extreme cases changing two or three times. (2) The pressure of the cotton reduces the congestion, and the gum returns to nearly a normal condition without treatment. (3 and 4) In extreme cases, remove the cotton carefully, and fill the lower portion of the cavity up to the desired height with amalgam (prefer copper), and, if desired, finish with gold in the usual way, using the dam to protect from moisture. *A. P. Southwick, Buffalo, N. Y.*

(1) If the cavity is to be filled with gold, I do not attempt the rubber-dam at first. After the cavity is prepared, begin filling with tin and gold, having moisture dammed back with absorbent cotton or napkin, held in place with clamp, fill a little above gum margin, then burnish down to wall of cavity, now place on your dam; then dry out cavity with bibulous paper, or spunk, followed by hot air blast from chip blower, or hot air syringe; next use absolute alcohol, then a little chloroform, then hot air blast; now your gold will stick as though no moisture had ever been admitted into the cavity, and what was a difficult cavity is now simple. (2) I find nothing better than a strong solution of chlorate potash and a little cologne water, for inflammation caused from application of rubber-dam, used as wash every half hour. (3) If cavity is in lower tooth, I always use dam. (4) As a rule, with gold. *R. C. Young, Anniston, Ala.*

In back teeth I force the gum down, by filling with soft gutta-percha, pressing on the gum. The gradual swelling that takes place in the filling material will drive the gum back, keeping a healthy surface. After a time, the cavity can be quite easily filled with any material suitable for the place. I apply the rubber-dam when moisture can be excluded by subsequent ligatures and wedges, without too much pain to the patient. I also drive the gum back by cotton and sandarac plugs.

Charles T. Howard, Rochester, N. Y.

SECRET AND PATENTED LOCAL ANESTHETICS.

There is, it would seem, a lively business being carried on in the sale or licensing to secret or patented anesthetics for the cure of toothache, the relief of sensitive dentine, and the painless extraction of teeth. We are constantly in receipt of inquiries as to what we know of Smith's, Jones', or Brown's preparations. Occasionally comes an anxious applicant who says that his rival in the village has purchased the exclusive right for that locality, and is drawing all the patronage to himself by bold advertisement of the fact that he only is entitled to employ this last best gift of Heaven to man. "No danger, no disagreeable after-effects, no unconsciousness,—simply an absolute immunity from pain during operation or extraction." Most of these wonderful anesthetics are compounds, the ingredients of which are known only to the compounder; but they are all, first and foremost, perfectly safe and demonstrably efficacious as obtundents of sensibility, whether used for preventing pain in excavating preparatory to filling, for the relief of toothache in exposure of the pulp, but bathing the gums surrounding a tooth previous to the application of the forceps, or by injection into the gum-tissue for like object.

Not being informed as to the composition of these various panaceas, we cannot pronounce as to their efficacy or safety. We can and do, however, reply to inquires concerning the employment of secret preparations, especially by injection into the tissues, that it would appear to be unprofessional and somewhat risky to inject any agent into the circulation, of the nature and effects of which the administrator was in ignorance.

Other preparations of this class are patented. Five of such patents are now before us.

The first is that of Robert H. Peak, of Orlando, Fla.:

This is mainly designed to be used for preventing or relieving the pain in sensitive dentine during the process of preparing the cavity of the tooth for the purpose of filling it; also, as a disinfectant and deodorizer for preventing septic action and lessening the liability to trouble usually following a dental operation. Furthermore, if applied to the cavities of dead teeth and the

nerve-canals be thoroughly cleansed with the compound before filling the cavities, it will prevent the formation of alveolar abscess after they are filled by destroying the tendency to generate gases in and at the root of the tooth.

This preparation is composed of liquor ammonii acetatis, half-ounce; salicylic acid, eighty grains; hydrochlorate of cocaine, eight grains.

The second of these patents is that of Alfred L. McCarty, of Des Moines, Ia., the object and composition of which is thus stated:

To provide a simple, safe, efficient, and convenient compound specially adapted for use in the practice of dentistry; and my invention consists in compounding the following-named ingredients, in about the proportions specified, to wit: five grains crystallized muriate of cocaine, six drops of chloroform, six drops of extract of staphisagria, three drops of oil of cloves, and three drams of water. These ingredients are thoroughly mixed to produce a volatile fluid that can be readily put in vials, to be therein placed on the market for sale, and readily applied locally and hypodermically for all the purposes for which an anesthetic is adapted.

The third patent is that of Eugene F. Jaques, of Burton, O. The patentee says:

My invention is in the nature of an anesthetic to be applied locally by hypodermic injection, and it is specially designed for use in the extraction of teeth.

In compounding my anesthetic I take the following ingredients: hydrochloride of cocaine (*Eyrthroxylon coca*), two grains; carbolic acid (*Acidum carbolicum*), one minim; oil of wintergreen (*Oleum gaultheriæ*), three minims; oil of mustard (*Oleum sinapis*), one minim; alcohol (*Spiritus purificati*), two minims; pulverized boric acid (*Acidum boricum, pulv.*), one grain; distilled water (*Aqua distillati*) forty-nine minims, and oil of cajeput (*Oleum cajeputi*), one minim.

The next in order is the patent of Alfred Clark, of Montpelier, Vt. The composition he says is to be applied "to the gums near the teeth to be extracted, and also injected into the gums from three to seven minutes before beginning the operation of extracting the teeth." He thus describes the compound:

My composition consists of the following ingredients combined in the proportions stated, viz.: chloride of sodium, two grains; hydrochloride of cocaine, two hundred grains; chloral, one grain; essence of peppermint, one grain, and carbolic acid, one-half grain. The dose for use when teeth are to be extracted must vary with the case in hand, as from two to five minims. The salt in this composition lessens the soreness and swelling of the jaw. The carbolic acid is useful in cleansing any ulcer or abscess and will hold nausea in check. The peppermint, as well as the carbolic acid, will resist this feeling of sea-sickness which cocaine alone might cause. If the cocaine were used alone, it might also cause a swelling of the tissues of the jaw and face. These ingredients are to be thoroughly mixed.

Now comes the patent of Robert Isaac Hunter, of Norfolk, Va., No. 394,693, December 18, 1888, described as follows:

My compound is composed of the following ingredients, in the proportions stated: chloral hydrate, six grains, cocaine, five grains; arsenic, ten grains; creosote, twenty drops; carbolic acid, five drops. These substances are put together and three drams of water are added to form a complete solution of the solid matters.

In practical use, a small pledget of raw cotton is saturated with the above solution and inserted in the cavity to be excavated. The compound will at once act as an obtundent or anodyne on the sensitive dentine composing the body of the tooth, and in a short time—ranging from five to fifteen minutes—it will produce complete insensibility of the nerves distributed through the dentine, so that the patient will experience no pain during the subsequent operation of excavating the cavity by means of suitable instruments.

Dr. Hunter repeats his formula in his claim, as follows:

What I claim is—

The improved dental obtundent or anodyne hereinbefore described, composed of chloral, six grains; cocaine, five grains; arsenic, ten grains; creosote, twenty drops; and carbolic acid, five drops, substantially as specified.

This was the obtundent shown by Dr. Hunter before the First District Dental Society of New York at the November meeting, and to which Dr. W. H. Atkinson referred when speaking of a case of ranula on which he had just operated. He is thus reported. "If the discharge from the root-socket is resumed, he recommends anesthetizing the parts with some compound of cocaine, Dr. Hunter's obtundent for instance, opening down to the alveolar process and removing with a bur the rough or necrosed portion of bone."

In a circular accompanying the package of "The Latest Improved Dental Anodyne," Dr. Hunter says, "This preparation is: not used by dentists alone, but can be used by any one, as it is a useful article in every household. Mothers should not be without it, as they can stop the little ones' teeth from aching in a few minutes. This anodyne has the advantage over all others, as it does not make the mouth sore. You can use as much as you like with no bad results. It is perfectly harmless."

Recurring now to the formula, we find there are ten grains of arsenic in three fluid drams and twenty-five drops,—practically (not allowing for a gradually increasing strength by the evaporation of the water) one grain of arsenic to twenty drops of the liquid. Is this a proper compound to be employed to allay sensitiveness of dentine over a living pulp? Is this a safe compound to be put into the hands of mothers for the use in the mouths of their

children? Is this a compound entitled to the indorsements of prominent dental practioners as a "satisfactory *anodyne?*" If so, our chemistry and therapeutics are at fault. If the indorsements we have seen were given with a knowledge of the constituents of the "anodyne," we marvel; if they were given without such knowledge, there is no necessity for comment.

Moreover, this "anodyne" is dispensed in plain half-ounce white glass bottles, without label of any description. Not one of the usual precautions to warn against mistake has been adopted: such as blue glass, a fluted bottle, or a label of "Caution," "Poison," "Not to be swallowed," "Use with great care," or anything of the sort.

It would seem that the following provision of the Pennsylvania law as to labeling poisons is not complied with in this case:

No apothecary, druggist, or other person, shall sell or dispose of, by retail, any morphia, strychnia, arsenic, prussic acid or corrosive sublimate, except on the prescription of a physician, or on the personal application of some respectable inhabitant of full age, of the town or place in which such sale shall be made; and in all cases of such sale, the word poison shall be carefully and legibly marked or placed on the label, package, bottle or other vessel or thing in which such poison is contained; and when sold or disposed of, otherwise than under the prescription of a physician, the apothecary, druggist, or other person, selling or disposing of the same, shall note in a register kept for that purpose, the name and residence of the person to whom such sale was made, the quantity sold, and the date of such sale; any person offending herein shall be guilty of a misdemeanor, and on conviction, be sentenced to pay a fine not exceeding fifty dollars.—*1 Purdon's Digest, 335.*

[There is a similar law in nearly all the States.—ED. ITEMS.]

Of course if any cautionary label were affixed to the bottle it would seem to be in contradiction to the language of the circular, —"You can use as much as you like with no bad results. It is perfectly harmless."

We respectfully suggest that the indorsement of such a preparation, either with or without a knowledge of its components, by dental practitioners, is a question in ethics which it would do no harm to discuss.

—*Editorial in Cosmos.*

To remove the black deposit from rubber plates that have been in long use, I take of alcohol, ammonia, and chloroform equal parts. Pour a little of the liquid onto the plate, add pumice stone, and quickly scour; then polish with oil and plaster, in the usual way. *Dr. W. D. Tickner, Randolph, Wis.*

COPPER AMALGAM.

The *Dental Mirror* sent out inquiries regarding this filling to several dentists. A few are satisfied with it; more used it occasionally in specific cases; but most either speak sparingly in its praise, or condemn it in to-to. Thus Dr. Hayhurst, of Lambertville, N. J., says:

I have abandoned the use of copper amalgam because it seems to disintegrate on the grinding surface, I suppose on account of oxidation. Therefore, I think it is contra-indicated in such cases. I have some cases in approximal fillings that seem all that any one could desire, firm and sharp. I have used it both dry and soft. I have thought that probably the metal was too coarse in its nature for so delicate a purpose. I shall not use it any more in its present condition.

C. F. Bliven, of Worcester, Mass., says:

I have experimented with copper amalgam, and have half a dozen or so packages of the make of celebrated men, both in Europe and America, which I should be happy to give to any one sending me his address. I am of the same opinion as Dr. J——, that some one will advocate copper plates next. I don't see why we can't have, in our dental colleges, a department for experimentation with new materials, as the younger men of the profession can't afford to do it. I think I could put a gingerbread preparation on the market for capping exposed pulps, curing abscessed teeth, etc., and make it a success.

Dr. M. L. Rhein, of New York, replies:

(1) Yes: for I have found it very untrustworthy, even in deciduous teeth. (2) Very many such cases have come under my notice; when disintegration has set in at once no oxidation has been apparent, but I have numerous cases on record where the filling was observed "black as ebony," and a year later, on examination, half the filling had disappeared. (3) From these observations no other conclusion can be drawn than that the permanency of the filling depends on the chemical condition of the oral fluids, for I have observed the disintegrating process in all positions. (4) Only in shallow cavities that cannot be properly prepared to retain another form of alloy; or it would be admirable in some cases if we discover what conditions of oral fluids will most affect it.

Dr. B. F. Luckey says:

(1) No, I do not. Have used it with great satisfaction in such cavities. (2) No. (3) Have seen none. (4) I find the best results from copper amalgam in buccal and cervico-palatine cavities in soft teeth. Am delighted with it in such places. (5) Just dry enough to make a perfect mass without crumbling. Would say I have not used copper amalgam extensively, but a little, as favorable cases have presented.

Dr. F. T. Van Woert says:

In reply to query No. 1, yes. (2) Have seen many copper amalgam fillings disintegrate, but never knew them to oxidize in such cases. (3) I

think failures are due simply to disintegration. (4) I do use copper amalgam in some cases, particularly in the posterior deciduous teeth. (5) I use it soft.

No doubt many of your readers will wonder at my answering the above queries in this manner. I would simply say in explanation, that my experience with copper amalgam, which promised so much in the beginning, has proved a sad one in the end.

THE BRITISH DENTAL ASSOCIATION.

Dr. W. C. Barrett, of Buffalo, has been to England. Among other things he gives an account of the smoking-room of the British Dental Society, which we are sorry to hear him say "might with benefit be copied in America." He says: The British Dental Association is not exclusively a scientific body. In fact the reading and discussion of professional papers is not necessarily the principal business to employ the time at its annual meetings. It must promote the general welfare of dentists, look carefully to the enforcement of the law, sustain the general ethical tone, and pass such inter-professional legislative acts as will serve the best interests of the whole. One of its most important duties is to maintain the social status of its members, and to raise the general body in the estimation of a people who judge men largely by an arbitrary standard of gentility. The association stimulates the social virtues, and much of its time is devoted to promoting a feeling of good fellowship. As a consequence, its dinners, its luncheons, its receptions, its balls and its general entertainments, are, in character and number, quite unknown to like societies in this country. At the Exeter meeting, for instance, there was a general *table d' hote* lunch at the headquarters hotel each day, and a formal dinner at six o'clock, at which all members were expected to be present so far as was practicable. These meals were very elaborate, and the company was exclusively professional.

There was also another thing to which American societies are a stranger, and that was a "Smoking-room." This was a large hall in the principal hotel, sufficient to accommodate all the members, and provided with tables, chairs and sofas, writing materials, a piano, blackboard, etc., and this was also exclusively for the use of members. The average Englishman does not arise from his meals and go directly to his business. Especially after dinner does he love to sit and enjoy his bottle of wine, or his glass of grog, ginger ale or "lemon squash," and smokes his pipe or his cigar. So the smoking-room becomes the general assembly place, for in an English hotel you never see a crowd of men in the lobbies and

halls, or lounging about in the doorways puffing cigars. Of course there are no " bar rooms " in the American sense of the term. The guest goes to the smoking-room for his after-dinner pipe and drink.

The Exeter meeting smoking-room was something which might with benefit be copied in America. The hours spent there were hours of sociability, of conviviality even. In addition to many capital vocalists and elocutionists among the members, some professionals were engaged, and there were frequent songs and recitations, largely of a comic character. When the assembled company had made up its mind that it wished to hear some one and began calling for him, his best way was to yield gracefully, for there would be no peace for him until he did. He might respond by a song, an instrumental selection, a recitation or a brief speech; it was quite in order for him to tell a story, and one member gave entire satisfaction by whistling; but he must in some way contribute to the general entertainment if called on. The intervals were filled up with conversation, and every man had a glass of something at his elbow. It might be milk and water, and he was under no obligation to drink even that, but he must give an order to the waiter. On my first entrance I was asked what I would drink, but as I was not accustomed to anything *after* dinner, I attempted to crawfish. "But you must have *some*thing, you know," was urged on me with that peculiar English-rising inflection, which it was impossible to resist, and—I had it. Then followed the most enjoyable hour which I ever spent at a society meeting, as I was alternately amused and thrilled by the successive contributions, and instructed and entertained in conversation between.

I have spoken of this official smoking-room at length because it is something of which we do not possess any counterpart.

—*Dental Review.*

Action of Peroxid of Hydrogen on Infected Surfaces.—When peroxid of hydrogen is brought into contact with any diseased surface, either of the skin or of the mucous membranes, its decomposition takes place immediately, and at first " ozone," which is the result of this reaction, coagulates the albuminoid matters of the secretions, the pus is destroyed, and also the bacteria. As soon as " ozone " has accomplished its cleansing effects on the infected surface, it is readily transformed into ordinary oxygen, owing to its instability.

—*Headlight.*

Ada Gray, of Cincinnati, is said to be " the only colored lady dentist " in this country.

CAUSES OF FAILURE.*

We often observe failures in gold fillings from not having solid borders to the cavity. These can be obtained only by the remova of all impaired tooth substance. It is not enough to remove the visible decayed portion, for the tooth substance is generally softened beyond this point. The treacherous white spots should be removed and the cervical wall cut down till thick and solid.

In striving to oblige patients and have as little gold show as possible, many fillings are sacrificed by leaving a thin wall of enamel on the labial side. The lingual wall is often left a mere shell of enamel that will stand but a short time. Over-malleting is undoubtedly injurious, and improperly finished borders of the filling, especially the cervical, invite decay.

In using amalgam the same care should be taken to obtain solid borders, and no wall be left composed merely of tooth enamel, for such walls after a time become friable under the amalgam filling, and break down. The exclusion of moisture from the cavity when using amalgam I consider as necessary as for a gold filling, though many operators claim that in the packing of amalgam into the cavity the moisture is thoroughly expelled. To obtain the best results from these fillings much depends on the mixing of amalgam and the means of inserting it. An amalgam should be used as dry as possible in most cases, and be thoroughly packed. I apply dry amalgam to both proximal and grinding surfaces, where admissible, to assist in drawing out the surplus mercury by pressure, and find it leaves the filling more thoroughly condensed and solid at the borders. Neglect to finish the filling properly to the borders predisposes the tooth to decay. For cutting away the excess of amalgam and finishing the filling on the proximal surfaces of the teeth, the composition silver strips of Dr. E. Parmly Brown answer the purpose admirably. They will readily pass between the teeth, and are so pliable that when used as a tape they conform to the shape of the tooth and remove all excess of the filling material, leaving smooth edges.

I believe a mistake is often made in beveling the borders of a cavity for amalgam, especially where a brittle edge alloy is used, yet some operators persist in so doing. Another cause of failure we sometimes find where the cavity has previously been filled with cement, and some portions left adhering to the borders to dissolve out and invite decay. To guard against this I have found it advan-

* Read before the Northwestern Ohio Dental Society, at Toledo, May, 1890.

tageous, when using cements for temporary purposes, to fill almost to the borders, where they have been cut down to the proper shape, and finish the filling with gutta-percha, or when using the cement alone, to remove all decay from the cavity, leaving the borders to be shaped when the cement is removed. I seldom use a matrix in filling with amalgam, as I believe in most cases a better filling can be made without its use.

There are so many cements on the market that it is difficult to give a general rule as to mixing to obtain the best results. Some require mixing thick and then softened by rolling between the thumb and fingers, while others will not stand this manipulation. The peculiarities of the cement one uses should be thoroughly studied. Probably, however, the best general results are obtained from mixing the cement as thick as it will work well, thoroughly incorporating the powder. Probably many failures in cement fillings come through using the material too thin; the acid crystallizing in a freer state, thus rendering it more easily attacked by alkalies, neutralized, and the bond of union, with the powder, broken down. This seems to be especially liable to occur at the cervical borders of proximal fillings, where the fluids of the mouth are held between the surfaces or under the free margin of the gum. Another cause of failure of these fillings, especially at the cervical border, is in permitting minute portions of foreign materials, such as blood, débris, or even a slight trace of moisture, to remain on the borders of cavities, for they make the filling imperfect at that point. If proper precaution is taken in filling with these materials, they can be made to last longer and do better service.

Failures in root fillings are probably caused more by filling before thorough disinfection has been accomplished, but a root may be thoroughly disinfected and prepared, yet filled in such a manner as to allow secretions to gradually accumulate in the canal and there decompose, lighting up the old trouble at the apex. This comes generally through faulty manipulation, though sometimes, perhaps, through carelessness in applying medicaments before filling that are incompatible with the filling material. For instance, if the cements are used, the root should not be wiped out with any of the oils, but bichloride of mercury. In using gutta-percha, oils may be used, for they are compatible with this substance. The material used for the filling, should be thoroughly adapted to the root-walls, and this requires time, patience and *thoroughness*.

I may add that many failures come through the neglect of patients to keep the teeth brushed and the mouth properly cleansed.

Dr. L. P. Bethel, Toledo, O., in Ohio Dental Journal.

PROFESSIONAL GUESTS.

Dr. L. P. Haskell, of Chicago, and Dr. W. G. A. Bonwill, of Philadelphia, were lately entertained by Dr. J. F. Frantz, President of The Wilmington Dental Manufacturing Company, at his residence, No. 919 Washington street, Wilmington, Del. Drs. J. M. Winner, Robert H. Jones, Charles J. Kinkead, F. E. Smith, and C. O. Funk, practicing dentists, Stansbury J. Willey, Vice-President of the Dental Company, and several other gentlemen, were present to meet the guests of the evening.

Dr. Haskell has been the guest of Dr. Frantz for a week, and has been at the works of The Wilmington Dental Manufacturing Company. He is well known as a distinguished writer, and is one of the ablest professors of prosthetic dentistry in the United States. He has also probably taken part in more dental clinic work than any other man in the country, and is looked upon as an authority in his profession. Dr. Bonwill is one of the most promising operating dentists in the country, and the inventor of a dental engine, mallet, and other dental appliances bearing his name. He and Dr. Haskell are representative men in their particular branches, and are looked on as the leaders of their especial fields. They are, to a certain extent, the opposites of each other in their work. They entertained the company with the discussion of subjects of interest to the major portion of those present, and the good-natured sallies that passed between them furnished considerable amusement. The meeting of these two men was something of a professional event, and both of them evinced a great interest in the different departments of the factory of the company. In the evening Dr. Bonwill returned to Philadelphia.

—*Wilmington News.*

THE "CHASE COMBINATION PLATE."

Many do not know just what this method is, and as it is really a valuable one I wish to call attention to it. Dr. Chase, of Vermont, several years ago devised a method of combining a *metal palate* with rubber covering the alveolar border. The method is a simple one, involving much less trouble in swaging than an all metal plate. The attachment of the rubber to the plate is unique, no loops, no holes, or necessity for soldering, and yet making the strongest attachment possible.

Its advantages are that it enables the patient, who cannot afford an all gold plate, to have at least a gold palate, which is a

great advantage; at the same time it enables the dentist to secure better remuneration than for rubber plates. Another advantage is that in absorption the rubber can be replaced without altering the metal part. In fact the *temporary* set can be made in this way, and at the proper time the case be re-modeled. Then it is easy to swage just the palatal portion of a plate.

Dr. A. S. Billings, of Omaha, owns the patent, and is now doing a veritable *missionary* work introducing this method as he goes from town to town, and demonstrates to the dentist, who, perhaps, never made a die, how simple a thing it is, using as he does Babbitt metal and oiled sand. He has done another good thing in putting on the market a splendid article of sand oiled and ready for use in two and three-quart cans; also a fine Babbitt metal from my formula.

It is unfortunate that he cannot multiply himself a hundred times so as to spread all over the land, and visit all dentists.

Dr. L. P. Haskell.

DENTAL EDUCATION.

The quotation in the January ITEMS from the remarks of Dr. Truman at the meeting of the American Dental Association, on Dental Education, I can heartily endorse, after seven years' experience in two colleges, and incidentally in others. It is especially true of prosthetic dentistry. There is not half enough clinical instruction. Too much of the student's time is taken up with lectures. This subject *cannot* be taught in the lecture room. The student is examined in theory, and students are often graduated without the ability to make a successful dentine on metal, and often not even on rubber.

The demonstrators are often inexperienced men, but they ought to be men of as much experience as the lecturers, and often more. With the large classes in some of our colleges, there is great lack of demonstrators, and often the junior class is cut in two, and the student gets only three months instruction instead of six, when he ought rather to get twelve. This is one of the serious objections to over-filled schools. The student would find it to his advantage to select a school, all other things being equal, which has the smallest number of students, because it is the *clinical* instruction which is of the most importance to him. He is stuffed full of theory, so that he passes an examination, but is sadly deficient in the practical knowledge so important to the dentist. I had a letter recently from a dentist in New Zealand, graduated from one

of our American colleges, who tells me that, though he was anxious to learn all he possibly could while he was in college, yet saw only one rubber plate made, and none of metal. He is coming back to get the requisite instruction to enable him to practice prosthetic dentistry. This is only one of many such letters I am constantly receiving from graduates of our colleges.

It seems to me the only way out of the difficulty is to defer all teaching of prosthetic dentistry to the last month of the term for the junior students, and then put them into the laboratory and keep them at the benches, under the constant eye of a good professor of prosthetics, and of demonstrators equally qualified. They would then be able to pass an examination, and show specimens that would indicate their qualifications. I say this from nearly two years' experience in a post-graduate school, where we have many under-graduates from the colleges.

In closing, I will quote the following pregnant remarks of Dr. Truman :

I believe the time is coming when we will have practical demonstrations of scientific results, and that the mere talk, as it has been called, will be laid aside for clinical demonstration. *For more than a quarter of a century I have been a lecturer to students, and am convinced that a more practicable way is desirable.*

L. P. Haskell.

SIMILARITY OF MOUTHS.

EDITOR ITEMS:—The similarity of two mouths, spoken of by Dr. A. H. Brown in January ITEMS, brings to mind an incident in my own practice. A woman of sixty came in and had a full denture made with rubber as the base. Shortly after getting them, she began to fail in health and finally died. In the meantime, her daughter had her teeth extracted, and at the time of her mother's funeral, she thought she saw a chance to save an honest penny, so she laid her dead mother's artificial teeth in a safe place, and after the old lady had been laid at rest, she concluded to try them in. To her very great satisfaction and delight, they were found to be a correct fit in every respect. The next time she came to town, I was treated to the rare sight of a recently deceased mother's artificial teeth in the mouth of her grown-up daughter, whose grief over her recent bereavement seemed to have found assuagement in her unexpected and timely good fortune.

L. D. Wood, Grand Rapids, Mich.

The dentist always goes to the root of the trouble.

PERIODICAL LITERATURE.

From the beginning of the circulation of this form of literature to the present, its direction has been tortuous as the brooklet, turning hither and thither after a new theory, speculation or idea; but as soon as these explode, or are proven impracticable and nondemonstrable, it at once deflects in another direction in search of fact, yet all this time gathering and growing in strength and developing into classified truth. It has now grown to be a great tributary to science, a distinct branch of the literature of the healing art, and is not so easily turned from its course as in the past. The bulk of this channel of science has now grown large enough to reflect some of the beauties of the profession that created it.

Every department of science and art now finds expression in periodical literature, from the reason that this form is most convenient, less expensive, finds easy postal transit, and is in strict accord with the progressive age in which we live, and its periodical visits are about as often as professional men have time to read and digest.

Before the days of journalism proper, books were written by individuals only, and on whatever subject elected, and sold generally according to their merit; but now the columns of any journal, in whatever specialty it advocates, invite the free opinion of all who can contribute any article in its special line, thereby encouraging interchange of ideas, which is the greatest barrier to egotism and bigotry and a potent factor to conservatism. Since this latter quality is so much needed in our ranks, it becomes of special benefit to us.

I see naught to condemn, but all to praise, for I am convinced that our journalism has done the greater part of making our profession what it is. Just as soon as a new idea has been evolved, a new discovery made, it has at once found place in our journals and immediately entered the homes where it could be read by all. It is the desire of us all to be the first in telling what others do not know. We seek the reward of praise, and this is the incentive to prompt publication of our ideas. The periodical literature has been instrumental in making us an educated profession, familiarizing us with a common language by which we understand each other —moulding our nomenclature.

Again, it has cemented us into one common brotherhood, whereby the best social feeling, which is so necessary to the development of our cause, is vouchsafed, and has proven to be the cir-

culatory medium which carries the pabulum for the up-building of the deficient tissues in our professional system, and purging out and bearing off the effect of our errors. In truth, our literature is but the life-blood of dentistry, and is the fullest expression of the profession in every sense. As the eye is the index to the soul, and its lustre increased and rendered more expressive as the creature becomes pure and better, so are our letters improved by the growth, purification and development of our specialty.

A moment's retrospection on the journalism of the past will serve to mark a distinction with the present worthy of consideration. The *American Journal of Dental Science* of 1850, copies of which I have preserved, reveals some interesting facts probably not known to our younger members. It contained articles from some of the ablest pens that have ever graced the pages of our literature. First among them was Chapin A. Harris, whose name will always be revered, R. N. Wright, M.D., Thos. Huxley, Robt. Arthur, and others, on subjects involving the most profound thought, as the Etiology of Dental Decay, Chemistry of the Metals, Dental Patents, and a great many other subjects that the younger members of our profession might be greatly benefited by perusing. These articles were lengthy, though cautiously written, and on bold and fundamental grounds, and would compare favorably, if not grace the literature of our day with all our modernization.

This journal contained one hundred and sixty-five pages of solid, closely-written matter, with six sheets only of advertising appended, while our most popular journals now contain about forty-five pages of advertising and forty-eight to sixty-four of reading-matter. In this, however, we do not disparage in the least either the diminishing of the reading-matter or the increase in advertising, as they are both essential to our day. We have now about twenty-five journals, which are read by eight or ten thousand dentists, and the advertising interest is increased a hundredfold because of the wonderful increase of inventions and appliances. Formerly there was but little to advertise. It is probable there has been more inventions in the last decade than had occurred during all time preceding the year of 1850.

Nor would we in any way deprecate the advertising accompanying our literature, for on the wings of advertising the journal is frequently borne to dentists in remote sections—a literature they would never otherwise get.

The advertising pages, too, are descriptive of machinery, modes and methods, with cuts and drawings so accurate as to place within reach of all a knowledge of how to use them.

Our periodical literature is truthfully a record of what we are saying and doing, and is the fullest expression of our specialty, divested of its Sunday garments of text-books. It is clothed in practical every-day garb, and to improve it means the improvement of the whole profession, which implies proper preliminary education, dental education and the extending of our facilities in all directions. Just in proportion to the thoroughness of this work will our literature be benefited. One of the best evidences of the improvement of our dental literature is its growing practical nature.

—*Dr. E. S. Chisholm, Tuscaloosa, Ala., in Southern Journal.*

DENTISTS IN GERMANY.

(CALLED ALSO TOOTH ARTISTS.)

That a dentist in Germany is not only called "Zahnarzt" (dentist), but also "tooth-artist," may be new to their American confrères; that, however, this is the case, will be seen by perusing the following news items, properly translated from the weekly *New York Staats-Zeitung:*

PLAYING POSSUM.

"Dr. Von Donop is a dentist, and a nobleman, of Prussia, Berlin. The tooth-artist, Von Donop, who, on account of different criminal offences, has been wanted by the police, and who has been trying to make it appear he had committed suicide (his suicide had also been reported by this paper, the *New York Staats-Zeitung*), was to-day arrested at the Central Hotel. The criminal police have arrived at the conclusion that Von Donop himself circulated the report of his death, intending to hush up all inquiries of the police for him."

The second item, in the same paper, tells about another tooth-artist's fine doings, which may be of interest to some. This article is from Luckenwalde, province Brandenburg, Prussia, as follows: "On account of repeated cases of rape, committed during his dental practice, the tooth-artist, K., has been sentenced to-day, by the jury-court of Potsdam, to a term of four years in the penitentiary."

Dr. K. may consider himself very lucky to be a tooth-artist in Prussia, as for the same offence in Uncle Sam's dominions, beyond the Mason and Dixon line, he very likely would have graced the end of a rope, or, at least, would have been presented with a lifetime sentence playing tooth-artist in the penitentiary.

Monroe, Meyers & O'Brien, Butte, Montana.

PYORRHEA ALVEOLARIS.

I do not believe there is such a thing as what is called a constitutional or hereditary feature to this disease, as is supposed by some. What is meant by hereditary trouble? Is it defective tissue, or disintegration in the tissues of the body? Is it a failure in the production of these tissues? Is it a peculiarity in the blood, or some defect in the life forces, or life currents? Those who talk about hereditary causes ought to discriminate and tell us what they mean by systemic condition, then we can tell what is meant.

What do gentlemen mean by saying: "We ought to begin two or three generations back?" You cannot go back to the grandparent, but it is true you can, possibly, begin with the children.

Many say it is dependent on systemic conditions. What does history teach? Did Dr. Riggs, who was the acknowledged champion on this question, resort to systemic treatment? I think not; but he did succeed without it. He demonstrated that it is dependent on a local irritant, and local treatment must be applied. Now, sometimes the alveolus does not seem to be much diseased—not dissolved to any appreciable extent, while, in other cases, the teeth are worn away so that the socket is enlarged and necrosed.

But there is, perhaps, in most cases, foreign deposits on the roots, that must, of course, be removed. If there are good alveolar walls remaining, or if they have not sustained much injury in any way, the work is more simple, and the removal of the irritants will bring about a favorable condition. That may be done by using the excavator, so far as practicable, scraping the roots and the walls of the socket until all the tissue is removed that will prove a source of irritation. By this operation a flow of fresh blood is introduced, and there is a favorable condition for reproduction of tissue. If the pockets are closed so as to prevent the introduction of foreign matter, there will be, almost always, a rapid restoration.

But, then, it is not always easy to know that this is accomplished, and the introduction of sulphuric acid has been, almost always effectual, rendering surgical operations unnecessary.

—*Dr. J. Taft, in Southern Dental Association, in Southern Journal.*

To true up a corundum wheel, take a straight-edged piece of sheet-iron, of about No. 22 gauge, and, while the moistened wheel is revolving on the lathe, hold the straight edge of the iron against the face to be trued. A few moments only are required to obtain a surface equal to a new wheel. —*Ohio Journal.*

RETAINING POINTS.

I will be glad when dentists learn to start gold fillings without retaining pits, they are so fatal to the pulps of teeth. I repeatedly find teeth, laterals especially, where pits have been made to retain gold fillings, with the tooth dead and discolored, and, perhaps, abscessed.

Now a few words as to how I fill a tooth with gold. In all cases I first adjust the rubber-dam (when I see a man that don't, I think to myself, he is not skilful enough in applying the dam, that is the reason), then I cut the margins down with my enamel chisel as smooth as possible, and avoid sharp angles. Then with a spoon excavator I take all soft decay from the bottom of the cavity, if I can, without coming too near in contact with the pulp; if I can't, I leave it in. I cut slight undercuts everywhere I can get them without weakening the tooth, at least in two places opposite each other, and all around, if possible. Then I pack non-cohesive gold all around the margins, in the old-fashioned way, till it is flush with the edge of the cavity, then build out the cuspid with cohesive gold, thoroughly condensed with the mallet, so it will take a high polish. I always start with non-cohesive gold for three reasons: first, it forms a more perfect adaptation to the wall of the cavity; second, because I can put in a gold filling better in about half the time; and third, because it does away with retaining points. Especially the first, because in the margins lie the virtue of your filling; however artistic it may appear, if it is not air and water-tight, it is a failure. I hope some retaining-point man will try my method.

Dr. E. Ernest Murray, Boston, Mass.

WHAT SHOULD BE DONE?

EDITOR ITEMS:—I have recently been a sufferer from what my dentist calls a peculiar case—I think he said an unparalleled one in his experience—and, at his suggestion, I write to you concerning it. To you it may be no problem. I cannot use your technical terms, but I will try to make myself understood.

October 7th, I felt pain on the right side of my upper jaw, and Dr. E. E. Murray took out the second bicuspid, that had been filled with amalgam years ago, but the filling had come out, and soon after an ache began in the same locality, which I supposed came from the first bicuspid, filled with amalgam November 8th. I told the dentist the latter seemed decaying, and I thought it should be extracted also. "No," he said, "that is in good condition; your

pain is neuralgia of the fifth pair of nerves; extracting the first bicuspid would not bring relief." The pain increased, and a month later he pulled it out. He afterward split it open and showed me that it was apparently good, filling and all. The pain then grew unbearable in one (or both) sockets, and nothing but a day in bed and hot applications brought relief. It finally wore off, but the pain is not yet wholly abated. Each tooth had a long root, leaving, of course, deep sockets. During this siege I could take hot and cold drinks with impunity, but soup and the like made me jump in agony. My upper gum, directly in front, was nearly milk-white during the pain. Now, I don't think it was neuralgia, and a medical friend agrees with me. I am past middle-age and never had any such pain before. I cannot but think it was toothache, pure and simple.

Is it an unusual case, and is it neuralgia? Why should a socket ache so long after a tooth is out, and so terribly, too? These may seem silly questions to you, but remember I am not a dentist, but a patient seeking information. Dr. Murray has a parchment from the Baltimore Dental College, also a certificate from our State Board of Examiners. He is seemingly conscientious and painstaking, though his experience is rather brief, he being but four years in actual practice. I ask your opinion, partly to satisfy my own mind, and at his desire, also.

George V. Butterfield, Boston.

WOMEN PHYSICIANS IN INDIA.—From a parliamentary paper which has just been issued, we gather that a considerable number of native women have taken up the study of medicine in India. At the close of the sessions 1888–9 there were twenty-four female students at the Calcutta Medical College, fourteen at the Campbell Medical School, and five at the Cuttack Medical School. At Agra, during the year, seven young women received licenses to practice. At Lahore there were nineteen, and at Madras thirty-nine female medical students, one of the latter being the first to take the degree of M. D. at the Madras University. There were also female students at the Grant Medical College at Bombay, and at the Government Medical Schools at Poonah, Ahmedabad, and Hyderabad. The movement initiated, or at all events patronized by Lady Dufferin, is thus giving good fruit, and as the objections entertained by many over here to the practice of medicine by females do not apply in India, with its peculiar social conditions, this result must be a matter for congratulation. —*Medical Press.*

DANGEROUS CHLOROFORM.

Among the recent contributions on this subject to medical journalism in England is a notable statement by Dr. Arthur Neve, in which that eminent practitioner gives his experience with chloroform and his disbelief in much of its reputed dangerousness. He says that in three thousand operations in his presence not a single fatal case has occurred, while the instances in which serious danger was threatened might be counted on the fingers of one hand, none of them being due, either, to any heart affection—it was a question of arrested respiration, and, once the potency of the respiratory tract being secured and a few artificial respiratory movements performed, all danger passed away. Promptitude is necessary, but this is not a quality in which surgeons are deficient, and it is to general surgeons, rather than to anesthetists, that the knowledge how to meet the danger is due. Reviewing this subject in its Oriental relations, Dr. Neve asserts that, as far as the inhabitants of Central Asia and Northern India are concerned, chloroform may be regarded as a perfect anesthetic, for, although the beer-drinking Tibetans occasionally struggle before succumbing to its influence, it may be said of ninety-nine per cent of the other races—Yarkandis, Hillmen, Pathans, Dards, Kashmiris, etc.—chloroform may be given deeply, and its administration prolonged, without a drawback, such as cardiac weakness, bronchial irritation, etc.

NECKLACES OF HUMAN TEETH.

Mr. R. H. Woodhouse presented to the Odontological Society, London, at its last meeting, a necklace of human teeth, for which he was indebted to the kindness of Mr. H. M. Stanley. The necklace was found on a young warrior, a native of Avisibba, a cannibal tribe, on the Sturi river, who was killed in an attack on Mr. Stanley's party, in which Lieut. Stairs was wounded with a poisoned arrow, at the junction of the Ruku and Sturi rivers, 1,500 miles from the mouth of the Congo. These necklaces are considered horrible by non-man-eating tribes. Other tribes wear necklaces of monkey or crocodile teeth. This particular necklace consists of thirty-eight teeth, some of which are deciduous, and one molar was observed to be carious. Most of the single-fanged teeth were perfect, but the roots of the molars were broken by the rude method of removal, to facilitate which the natives burn the skulls. Mr. Stanley informed Mr. Woodhouse that many of these necklaces

consisted of several rows, and sometimes contained as many as four hundred teeth; and, further, speaking of the prevalence of caries among the natives of Africa, which appears to be far greater than is generally supposed, stated that during the Emin Pasha expedition he and his subordinates extracted between three hundred and four hundred teeth for their followers; these, however, were natives of the extreme west and extreme east, and not of central Africa.

—*Lancet.*

ITEMS OF INTEREST.—More than nine-tenths of the dental plates that are worn in this section are made from vulcanite rubber; and one bad looking feature in these plates is the dark joints. And I find this can be remedied if the joints are only passable, by packing them with gold foil just before beginning to pack the rubber.

The gold is in no way acted on in the process of vulcanizing, and consequently the joints remain the same in appearance as when first waxed up.

Say the three anterior joints cost twenty-five cents to retain their true pink color, I call it quite a bargain, and I find it much appreciated by my patients, and consequently it is money and comfort to me.

Dr. H. B. Catchings, of Atlanta, Ga., has sent me a book containing the practical items culled from the leading dental journals of America. It is called "Catchings' Dental Compendium," and is a splendid thing, and cheap at any price to a practical dentist; and I was delighted to notice in it so many items taken from the ITEMS OF INTEREST. His selections speak well for your journal.

L. H. Henley, D.D.S., Marshall, Texas.

Dr. S. D. Potterf's remarks on tobacco, in last month's ITEMS, pleased me. They are certainly in accord with the movements of to-day for "The Elevation of Dentistry."

In particular do I hope the faculties of our colleges will take this into consideration, and exclude all users of tobacco from their institutions. Among the many disorders existing in our dental colleges, and overlooked by the faculties, tobacco-smoking is undoubtedly one of the most disagreeable, as well in the lecture-room as in the infirmary. And then, when we consider its baneful effect on the standing, acceptability and success of a dental practice, we are astonished it is not ignored by every practitioner. *Th. S.*

RETAINING POINTS.

Dr. T. W. Brophy says: I am sometimes amazed to hear gentlemen talk about cutting grooves down around the pulp and proximal surface for the introduction of gold fillings. I regard it in almost all cases as unnecessary. I think a pellet of gold can be put in and so fixed, though I have not adopted the method of holding a piece with the finger, but I can see its practicability, of putting a piece in of sufficient size with a plugger to fix it there and hold it until the other side is fixed, thereby having a retaining point. Retaining pits, in my opinion, should be relegated to antiquity, and never again revived, except in very rare cases. It is a thing of the past, or ought to be at least.

—*Dental Review.*

As for the diet question, it is probable that no amount of "acid phosphate," drunk at home or in the drug stores, can supply undue waste of phosphorus from the system. Nor can the hypophosphites, administered like a chemical reagent, be effective. As was stated, the phosphorus must be elaborated by nature. The best way to exhibit phosphorus is by eating bread made from some of the new flours known as "entire wheat flour." Such flour exceeds in nutriment the best white flour in the market, while its flavor is incomparably superior. Entire wheat flour contains all the nutriment of the wheat, while even the best brands of white flour have lost half their gluten and, practically, all the phosphorus. Entire flour is superior to Graham flour because the hulls have been removed. Hulls in Graham flour stimulate undue peristaltic action of the intestine, and large amounts of fluids are poured out, flushing out the alimentary canal before the nutriment has been absorbed.

Dr. T. W. Wood, Jr., Boston.

A Peculiar Way of Painless Extracting.—A lady lately came to my office to have a left upper six-year molar extracted. When I was in readiness for the operation, she asked her friend to come and squeeze her left thumb as tight as she could. I, of course, asked her what that was for, and she said when ever she had a tooth extracted she always felt intense pain in that thumb, and by pressing it in that way she did not mind having a tooth extracted. She has had quite a number extracted, and says she always uses this means of taking away the pain. She was hysterically inclined, and this probably accounts for it.

E. Ernest Murray, D.D.S., Boston, Mass.

Dr. William H. Trueman sends us the following two items :—

PARTING SOLUTION FOR PLASTER IMPRESSIONS. — Dr. Conyers Topley, of Germantown, Pa., recommends for this purpose equal parts of castor oil and coal oil, colored with aniline red. (Diamond dye, to be obtained at most drug stores, while not quite as soluble, will answer the purpose. A minute quantity will suffice.) A thin coating insures a perfect parting. It soaks into the plaster of the impression, and does not fill up the fine lines as does varnish, etc., and yields a sharp cast.

TO CLEAN BRITTANIA IMPRESSION CUPS.—Boil them for a few minutes in a strong solution of concentrated lye, rinse in hot water, and wash with soap and a stiff bristle brush, using, if necessary, a little finely powdered pumice stone; again rinse in hot water, wipe dry, and polish with whiting and a fine brush wheel on the polishing lathe. This will make them look as good as new.

TREATING PULPS.—Dr. J. A. Thornton says he has found the most expeditious way to dispatch a nerve, after having applied arsenious acid, was to cook them. He liked them fried. His receipt is to take an Evans' root-drier, heat it nearly red-hot, push it into the canal. The nerve and pulp would stick to the instrument, and could be more readily and effectually withdrawn than with a nerve-broach. He has found the root-drier an almost indispensable adjunct in filling root canals successfully. They should be more generally in use; and would be if they were more generally known.

DR. T. B. WELCH :—I herewith inclose postal money-order for one dollar—subscription to ITEMS OF INTEREST for coming year. I have taken the ITEMS from its beginning, but much of the time have passed in my subscription through some dealer. But the journal is more than worth the dollar, without any reduction for a commission, so I expend a few cents for money-order fee and postage, that you may receive price in full.

L. C. Longwell, East Brady, Pa.

WHY USE AN AIR-CHAMBER?—How many that use them have tried to do without them? Secure a good impression, relieve pressure of plate on the harder portions of the palate, according to Land's method, if you please, and you will soon prove to yourself that you can do without "the air-chamber," and, at the same time, give the patient a far more comfortable denture.

Th. Sigveland.

In using cocaine for devitalizing pulps, I have had a good deal of satisfaction. In the lower molar, after applying the rubber-dam and after opening the cavity thoroughly, dipping a wood point into a fifty per cent solution and dropping the solution into all the canals. I then take a smooth bristle, and gradually but carefully, after having wrapped a few fibres of cotton around it, carry it down the side of the canal to the apex, waiting a few moments as I proceed (not much pain being manifested). In from ten to fifteen minutes I can remove the pulp in an almost painless manner. I have been doing this for several years; but I cannot do it successfully by simply applying cocaine on the external portion of the pulp. It has to be carried to the apex with a fine bristle. In doing that you carry the medicament to the proper point.

—*Dr. Garber, in American Dental Association.*

THE NEW TARIFF.—A servant girl experiences its effects in a peculiar way.

PROVIDENCE, R. I., Oct. 27.—A servant girl in this city has experienced the effect of the new tariff in a peculiar way. For some time she has been saving her wages for the purpose of buying a set of false teeth. Thinking she had sufficient money she called upon the dentist, and found that the price had gone up 33⅓ per cent. The dentist explained this by saying that the raise was caused by the new duties on porcelain stock for teeth and pins, for fastening them to the plates. The girl will have to work a couple of months longer before she can get the teeth.

EDITOR ITEMS:—Though laboratory hints are given in every ITEMS, I have not noticed this one. In place of oil to cover plaster impressions I always keep a quart bowl of soap solution, as thick as cream. I varnish my impression as usual, and place it bodily in the solution, and allow it to remain for five minutes (longer will do no harm), then wash deposit of soap off with a stream of cold water, and run cast as usual. The impression will be soft enough to cut easily, and with less danger of injury to cast.

Burt. J. Hill, E. Akron, O.

WASHING AMALGAM.—Dr. B. F. Arrington, of Asheville, N. C., says: "Before commencing to rub it cover the filings and mercury with water, and add a few drops of sulphuric acid, as recommended by Dr. Jas. H. Harris, of Baltimore, and wash carefully and re-wash with water, followed by alcohol."

THE PATRIARCHS' BANQUET.

The Patriarchs' Dinner in New York, recently, was an enjoyable affair. It was given by the First and Second District Dental Societies, of New York City, the Brooklyn Dental Society, the Central Dental Society, of Northern New Jersey, and the Odontological Society, of New York. Dr. N. W. Kingsley, who originated the idea, presided with his accustomed facetious versatility.

The object of the banquet was to bring together dentists who commenced practice more than fifty years ago, though all may not still be in practice. The following list shows their names and number of years of actual practice:

L. S. Straw, of Newburg, 50 years; John B. Rich, of Washington, D. C., 54 years; Jesse C. Green, of Philadelphia, 48 years; Spencer Roberts, of Philadelphia, 47 years; L. J. Wetherbee, of Boston, 45 years; C. A. Kinsbury, of Philadelphia, 53 years; T. H. Burras, of Long Island, 61 years; A. D. Newell, of New Jersey, 30 years; W. B. Hurd, of Long Island, 40 years; J. Hayhurst, of New Jersey, 46 years; Jere A. Robinson, of Jackson, Mich., 63 years; A. I. Volck, of Baltimore, 42 years; John Allen, 63 years; W. H. Atkanson, 54 years; W. H. Dwinelle, 52 years; S. A. Main, 50 years, the last four named of New York City. They were a striking well-preserved body of men. At least two were over 85 years of age.

Dr. Kingsley introduced the Patriarchs in a witty speech. "All of the Dental Patriarchs are not here," said he, "some are abroad. We tried to import them, but ran up against the McKinley bill. We endeavored to classify them as bric-a-brac, but it would not go. We thought of bringing them in as fossil remains, but they were too lively for that. We were in hopes that we could fetch them over as raw material, but there we struck the snag of interference with home production. But those of them that are here we commend to you. They are home-made and hand-sewed. In the Eocene age, when the stars sang together, they joined in the chorus. They tried to get into the ark, but failed, and built an opposition ark of their own."

Dr. Cornelius A. Marvin, of Brooklyn, welcomed the Patriarchs in an oration in which he described their services, and paid high tribute to their qualities. Addresses were also delivered by Dr. Hurd, and others.

Monthly Gossip.

BY WM. E. BLAKENEY, D.D.S.

THERE are 2,754 languages.

THE juice of raw onions applied to the sting of insects will destroy the poison.

INSTRUMENTS boiled for five minutes in a 1 per cent solution of carbonate of soda, renders them asceptic and preserves them from oxidation.

Two years ago you could buy platina for $7.00 an ounce; six months ago its price was $16.00 an ounce; to-day it is worth $20.00 an ounce—equal to gold.

THE bacteriologist is terribly exercised just now to find out how the bacillus gets into the lungs; and Professor Koch can throw no light on this question.

FILLING root canals and capping inflammed pulps are fruitful themes on which fruitful imaginations sprout wonderfully. From all of which may the good Lord give us speedy deliverance.

"THE principal dentists of Australia," says an exchange, "have women assistants." This is all right, but the principal dentists in the United States have wives for assistants, which is equally right.

ARISTOL, a new antiseptic, is a combination of iodine and thymol. It is designed to take the place of iodoform, iodole and zozoiodole. The best way of using it is to make a solution of it in ether or chloroform.

A SERVANT girl being asked by a Catholic priest: "What is meant by the holy state of matrimony?" replied: "Shure, yaes riverince, 'tis a sayson of torment to the sowl to fit it fur the blissid state to kum, or a jumpin' toothake."

DR. EDITH H. WHITE, practicing dentistry in the fashionable Syndicate Block in Minneapolis, has taken a fancy to a "gentleman of color," with a big family, and the two have skipped to unknown parts. Dr. White has blackened her fair name.

"WHAT would have happened," asks the *British Journal of Dental Science*, "if Wellington had been suffering from toothache at Waterloo?" Or, we add, if he had been stung by a wasp? Or, tripped up on a bananna peel? We pause for a reply.

DR. J. J. BROWN desires to know the "best thing to do when the gums have receded from the teeth and exposed roots are sensi-

tive." As a pain obtundent, the oil of cloves is excellent. Apply about the neck of the teeth, then try capsicum plaster.

J. H. DEWOLF, M.D., thinks it "too bad that the ITEMS OF INTEREST is not a medical journal, it being too good to be simply a dental journal." The apparent candor of the thought expressed by the doctor relieves the word "simply" from intended irony.

DR ERNEST MURRAY has expressed a desire "to take off his hat to the brother who told him to soap the holes of rubber-dam when the teeth are close together." Off with it, brother Murray! It is customary to remove head-gear when about to do a job of lathering.

DR. JOHN G. HARPER, long associated with the *Archives*, has assumed the entire editorial charge of that journal. Dr. Harper is an able dentist, and a writer of recognized ability. We extend to the doctor our hearty congratulations and sincerely hope he and the *Archives* may live long and prosper.

SAYS the *Medical and Surgical Reporter:* "Whenever cocaine is used it should be remembered that it is as much a poison as morphine or strychnine, and that being more uncertain in its effects it should be watched with more care." It would be well for our professional brethren to keep these facts in mind when using cocaine on nervous patients with weak hearts.

DR. J. R. CALLAHAN, D. D. S., recently read a paper before the Ohio State Dental Society on "Hypnotism," from which we extract the following passage: "If a dentist was known to be a professional hypnotist the public would at once put him down as a fanatic, a crank, a spiritualist, an infidel and all that follows in that line." Why? Simply because hypnotism, so-called, if real, is dangerous, and if not real, is a fraud of the rankest kind.

"WE want and must have," says Dr. L. Ashley Faught, "at the present time, less rivalry between our institutions of learning. The effect should not be for popularity, or to rank as the best; but the aim should be the same in all—to help one another preserve the honors of the degree, and to prepare, properly, material for the dental ranks." Rivalry, stimulated by an ambition to excel, is always legitimate and proper. The dental college that strives for popularity by ranking as the best, deserves the approval and patronage of the profession.

THE text of an elaborate discourse delivered by A. S. Hoff, D.D.S., of Ann Arbor, Michigan, before a dental society, and published in the *Western Dental Journal*, is, "Your Old Men Shall Dream Dreams, and Your Young Men Shall See Visions." Bibli-

cal, very, and hits the old and young alike; but, after all, dreamy subjects are too visionary to take up the time of dental societies just now. Hold on, Brother Hoff, till the millenium comes, and then pitch into dreams and visions to your heart's content. Give us something more substantial now, please.

JOHNNY GETHINS, the thirteen-year-old boy whose leg was sawed off last November, in an attempt by Dr. A. M. Phelps to piece it out with the fore part of a dog, is still bound to his cot in Charity Hospital with withered limb and painful experience in suffering—the operation having proved an entire failure. It is said that the doctor intended to repeat the experiment, but the City Commissioners of Charity and Correction notified him that another operation on the boy's limb would not be allowed. The torture to which this child has been subjected is revolting to humanity, and merits the condemnation it has received from the medical fraternity in this city.

"A PHYSICIAN well-known in Elizabeth, N. J., connected with the hospital," says Dr. Westlake, "recently rode in the same horse car with me. I asked: 'Do you have many oral surgical operations?' 'Oh, yes,' said he, 'quite a number.' 'Do you have your dental-surgeon perform them, as they do in some hospitals?' 'No; what good is a dental-surgeon except for pulling teeth? If I had an excision or a resection of the jaw I would not allow a dental-surgeon anywhere near me. I would not allow a dental-surgeon to operate in the hospital.'" The reader will notice how elephantine in size the pronoun "I" is, and how infinitesimally small the other fellow is in this little speech. Well, we feel awful about it, being a dental-surgeon, but not enough so to cry. And we hope our professional brethren will not become despondent because this self-opinioned pensioner on the city pay-roll of Elizabeth indulges in brainless talk. It is a pity he was not born about the time the Pilgrims landed on Plymouth Rock.

As a Committee on Dental Art and Mechanism of the Iowa State Dental Society and of the Section of Operative Dentistry of the American Association, I wish to ask the co-operation of all interested in bringing before these two societies anything new and valuable in the way of methods or appliances.

A. W. McCandless, Davenport, Ia.

Pierson's Appointment Book this year is quite equal to any of those preceding. It is very neat and convenient.

Our Question Box.

WITH REPLIES FROM OUR BEST AUTHORITIES ON DENTISTRY.

Address all questions for this department to DR. E. N. FRANCES, Uvalde, Texas.

Question 11. *What are the symptoms of granulated pulp, and what treatment should a tooth with granulated pulp receive?*

I have written twelve pages of *Cosmos* on pulp nodule work, for which please see January, 1877, pages 6 and 7; February, pages 57 to 62; March, pages 113 to 116. *J. Foster Flagg, Swarthmore, Pa.*

In "Harris' Principles and Practice," page 282, under the heading "Ossification," you will find the leading or general symptoms of pulp granulation, but he gives no treatment there. I have read the treatment, but cannot now recall where you will find it.*

J. P. Stansell, Temple, Tex.

The symptoms of granulated pulp are severe and increasing pain, more constant than any other kind of toothache, usually in a tooth badly carious; pulp not exposed. Either destroy pulp or extract tooth.

Frank Abbott, 22 West Fortieth street, New York City.

The usual symptoms of granulated pulp are periodical, dull, heavy pains, with sometimes sufficient pressure on nerve to cause death, and abscess with fistulous opening and discoloration. For treatment, I open thoroughly to apex, and fill just as I would any tooth with dead nerve.

George S. Staples, Sherman, Tex.

You use the word granulate; now I prefer to use the word disintegrate to express the effect. Granulate is to form granules, like grains; the other to separate, flake off, to part from. Now this is seen only in one class of teeth out of the five classes or descriptions given, with only four temperaments. The class alluded to is in soft caries or large pulps, when the teeth seem nothing but pulps, with frail walls of enamel around them. The symptoms are like ordinary pain from exposure in common caries. Treatment is removal of all foreign substance located in cavity, including that part of pulp disintegrated, which, at times, is quite sensitive, but can be obtunded with application of carbolic acid and oxid of zinc for a few minutes. When particles, etc., are removed, apply over the base of cavity carbolic acid and oxid of zinc as capping, which can be done as a swab on cotton, and then line the cavity with oxyphosphates. After thoroughly hardening, fill with gold or amalgam. I prefer to fill entire cavity with phosphate, and later cut away and fill with metal.

J. H. Grant, Palestine, Tex.

Question 12. *What is the best way to separate teeth to finish gold fillings. I have been using Perry's two bar separator, but find it unsatisfactory?*

* Ossification of pulp will be found in Harris' tenth edition, on page 229.—E. N. F.

Operating only on teeth below medium in structure, I have practically abandoned gold work. *J. Foster Flagg, Swarthmore, Pa.*

I use a straight bar separator, manufactured by S. S. White & Co. Cost, 75 cents. *J. P. Stansell, Temple, Tex.*

My practice is to use two wedges; one at extreme distal ends of crown first, and second one at necks of teeth, usually wood. If, however, I must take time to separate, I do it with rubber, using very thin pieces first, and doubling thickness each day till space is secured.

Frank Abbott, 22 West Fortieth street, New York City.

I have never been satisfied with results from separators; hence, I use a pledget of cotton, saturated with chloropercha, forced between the teeth and renewed every day till sufficient space is gained. It is slow, but does not make the teeth sore, and, consequently, no danger of destroying nerves.

George S. Staples, Sherman, Tex.

I always separate well with orange-wood for immediate filling, or cotton wadding over night. Have used all devices, and as yet have had no trouble, except for immediate filling and finishing. Perry's two bar separators are good in their place, but do not answer the requirements.

J. H. Grant, Palestine, Tex.

Question 13. *In using copper amalgam, in combination with other alloys, I find it inclined to granulate and soon give out at the cervical wall. Is there any way to prevent it, and will it do the same with gold?*

I have never used copper amalgam for other than experimental purposes for many years; now, do not use it at all. See "Plastics," fourth edition, page 104. *J. Foster Flagg, Swarthmore, Pa.*

I have had no experience with copper amalgam combined with other materials. *J. P. Stansell, Temple, Tex.*

I never use copper amalgam.

Frank Abbott, 22 West Fortieth street, New York City.

I never use copper amalgam, for the reason that I believe other bright amalgams will preserve the teeth equally as well, and look much better. I have always believed that cervical wall failures were due to faulty manipulation when any first-class gold or amalgam was used; either failure to thoroughly prepare the cavity, or failure to thoroughly pack the filling at all points. *George S. Staples, Sherman, Tex.*

I have had no experience in the application of copper amalgam. If I commence with gold, I finish with gold; and if with alloy, I finish with that, of course capping excepted. I can see no sense, neither can I see the benefit to be derived, in filling the base of a cavity with alloy and capping with gold, unless it is economy, and that should not be considered when treating the organs of the mouth. *J. H. Grant, Palestine, Tex.*

For Our Patients.

HE WOULD SPEND HIS FIFTY CENTS IN GOING TO THE CIRCUS.

An old fellow that, according to the *Arkansaw Traveler*, very much resembled the type of countryman found in the comic pictures of the irreverent illustrated weeklies, stumbled about on the stairway leading to a dentist's office, and finally discovered the door, knocked on it till the dentist invited him in, in a tone by no means gentle, to enter without going to the trouble of knocking down the house.

"Wall, you are about the hardest man to git at I ever did see," the visitor remarked, as he entered the room. "Been a-stalkin' round here for a good bit."

"You have found me, and now what can I do for you?"

"You pull teeth, I reckon?"

"Yes, that is part of my business."

"All right. I have been bothered a good deal lately with a fetched-taked snag of a thing, an' I thought if we could come to some sort of an understandin' I mout have it snatched out. I never go to expense if I can help it—economy is my motto in all things. I'm an ole liner myself—vote for the tariff an' save all I can. What air you holdin' teeth at now?"

"I don't understand you."

"What air you holdin' teeth at—what is it worth to pull 'em?"

"Fifty cents apiece."

"That is for a whole tooth, I reckon. This here one"—and he opened his mouth with an awful grin—"ain't more than half a one, you see. I reckon you will lift her out for about half-price."

"No; full price. I'd rather pull a whole one than a snag."

"Look here, out on my place I've got a blacksmith shop, an' tinker a good deal, fust and last, an' I sharpen a plow for twenty-five cents, an' it sometimes takes me more than an hour. You can sartinly afford to do something for a quarter that won't take you two minutes."

"Oh, yes, could afford it, but I won't. I won't underbid my neighbors, you know."

"Wall, then, I reckon we'll have to call this trade off. Good day."

He blundered down stairs and half an hour later came another thump at the door. The "old liner" had returned. "Look here,"

said he, "I thought I'd talk to you a little furder about this tooth. I went around to the lot whar I had my hoss tied, thinkin' I'd go on home an' worry the thing out, but it got to hurtin' me so that I couldn't stand it. Now, tell me, what is the very best that you will do?"

"Fifty cents."

"Fifty cents is a good deal of money to a man that sweats between the corn rows. Never plowed none, I reckon?"

"No."

"Wall, if you had you'd know that fifty cents is a good deal. Suppose we say thirty cents."

"You may say it if you want to, but I won't."

"Humph! You are a hanger-on if ever I did see one. How would forty strike you?"

"Won't strike me at all."

"Must have fifty, I reckon?"

"That's what I said."

"This tooth is about to kill me, man."

"All right; give me fifty cents and I will snatch it out."

He studied a few moments, and then shaking his head, replied: "No, blame if I do. I can go to the circus for fifty cents—can't stay to the concert, but I can see the monkeys, an' hear the clown sing, an' see the fellers jump, an' see the beautiful gal ride the hoss, an' will have something to talk about till fodder-pullin' time. Wall, good-day. Reckon I'll go to the show."

BOYS THAT UNDERTOOK TO LICK A TRAMP.

A gray-headed farmer and his son, a young man of twenty, were looking for a dentist yesterday, and the officer to whom they applied for information inquired:

"Has your boy toothache?"

"Wuss'n that," replied the father. "Jim, take the handkerchief off your mouth."

Jim did so, and there was a hole there which had once been filled with six or eight teeth.

"He wants new ones," said the father, "and we don't know but what his jaw is broke, too."

"Kicked by a horse?"

"Oh, no."

"Have a fall?"

"No. I suppose I might as well tell you, though Jim feels a little sneaky about it. He was with three other boys yesterday,

and they halted a tramp in the road and tried to make him sing and dance."

"And he wouldn't?"

"He didn't, anyhow."

"Did Jim get it all?"

"La, no! Jim got off light. He was able to come to town, while the doctor had to call on all the others. They got hold of a cream of a Tartar, they did, and I'm rather glad of it. They got the idea that they run the hull county, and could wollop anything that growed. Come along, Jim, and we'll see about the jaw first."

—*Detroit Free Press.*

"THAT's derned fine," said farmer Squedunk, as he gazed up at the sign, "'Teeth Extracted Without Pain—Gas Administered.' That's very pooty. I've got the blamedist ornerist toothache ever was, but I read the papers, I do, and I know that dern gas trick. Put you to bed, and turn on the gas. Next day there's an inquest, and a verdict: 'Another fool countryman gone.'"

—*Puck.*

A DECEPTIVE SIGN.—Patient: "How do you dare to advertise 'Teeth extracted without pain?'"

Dentist: "Why, I didn't hurt you while extracting that tooth. You were under the influence of gas."

Patient: "I know. It is your bill that pains me."

AN old darkey I have known many years called on me a short time ago for a job. "Well," said I, "how are you, Uncle Horace?" "Lawd, honey," he answered, "it am a mursy I'se libben, an dat's a fac'. Peers like I dun took a toophake lass month dat nigh onter make a dead niggah of me, but ole Doctah Tomping clapp a moughty big blister ounter my face, an' what you tink happen? Golly, when I tol' yo' yo' won't b'leave me no mo'n de chile unbo'n. But sho's I'm stand'n heah dat blister done gone fotch out dat toof wive de roots, vot am so long," holding his two hands six inches apart. "I'se been a tink'n dat de disembution an' de work'n ob de o'gans ob de human 'natomee am gett'n mo' an' mo' 'rac'lus ebbery day, an dat's de Lawd's truff, shuah."

"You, Liza Jane, chile," said an Indiana avenue mother, "wen you roun' pickin' up wood, don't you all eveh go neah dat medical college, fer dahs war dey cuts folks up to mek medisen of 'em, an' de medical students 'll git ye, if ye don't watch out."

THE EMBARRASSMENTS OF GIVING GAS.

A good story is told about a well-known dentist in this city. Some time ago he had occasion to operate on a young man who desired to have a molar extracted. The intoxicating gas was administered and the patient floated off to the realms of fancy. Round him were floating angels' figures, soft strains of music were in his ears, and the voices of loved ones seemed calling him. The voices grew more distinct and were evidently addressing him. They were entreating him in the name of all that was good (that was hardly the expression used but it will suffice) to open his mouth. He had a dim consciousness that there was something between his teeth. He tried to unlock his jaws but the effort seemed only to close them more tightly.

The abjurations were redoubled, while the air took on a sulphurous smell. The tooth had been extracted, but had dropped in the patient's mouth, and the dentist had inserted his thumb to reach it. Unconsciously the jaws came together, and the more he struggled the tighter they held. To free himself he had to use a pair of forceps as a lever and pry them apart. The dentist dancing about, the assistant convulsed with laughter, and the innocent expression of the patient, all made up a scene to be remembered. The doctor is careful now where he puts his fingers.

—*Express, Portland, Me.*

PUSH AND CONSTANCY OF PURPOSE may be considered two expressions of the same idea, and yet they differ in many important particulars. A man may push by various means and in different directions. Push frequently means only active work, while the other expression carries with it the idea of persistency. Constancy of purpose is a principle antecedent to successful pushing. A man may be of a pushing disposition and yet not persevere in any one effort long enough to win success. Constancy of purpose, on the other hand, would give a quality to his push that would insure success. However important to the young man it may be to have push, it is equally important that he should be consistent in his plans, and that he should stick to one thing long enough to allow it to develop. The child that planted a seed in the garden and dug it up every day to see if it was growing failed to gather a crop. He certainly was pushing, though his push was not properly directed. His brother, who patiently tended the garden spot, where he, too, had planted a seed, and by watering and weeding, allowed the plant to grow in its own natural way. —*The Office.*

Book Review.

IRREGULARITIES OF THE TEETH. By J. N. Farrar.

This is an exhaustive work in three large volumes, treating every phrase of the subject. If we can judge by volume just received, it is the labor of a masterly hand. An extract will give a view of its style and general scope:

There is a law governing the shape of things, and their direction of growth, yet there is a limit to the power of this law, and other forces may overcome it. A tree has its natural form, but a wind blowing in one direction for a long time may cause it to lean or to grow one-sided; the branches facing the wind will not only be prevented from reaching out so far as those opposite, but where the wind has an advantage on the lateral branches, the side having the longer boughs, or receiving the stronger current will often cause the trunk to twist. A persistent habit of pulling on the skin about the throat will cause folds, and applying the handkerchief forcibly to only one side of the nose will cause it in time to be permanently bent; so the teeth, by the application of improper force, may be moved out of line; and if the cause is allowed to continue, they will be permanently fixed in a wrong position.

It is by taking advantage of such effects of force that the dentist corrects irregularities of the teeth, the object being to remedy the overcrowding condition which causes caries, imperfect mastication, correct enunciation, and deformity of features.

It has been known from earliest times that, in some instances, a tooth, though much out of line, will move imperceptibly, and without assistance, into its proper place; but in most cases, its movements may be hastened by frequently repeated external pressure. This knowledge led to the conception of the idea that, by attaching something to the tooth to maintain a constant pressure, it would be compelled to move faster.

Sometimes, the correcting of irregular teeth is easy, causing little pain or inflammation, with others there is just the opposite experience. Is this difference owing entirely to a difference in the make-up of individuals, or does it not result largely from the manner in which the operations are performed? My object is to show that more depends on the operator than the patient. It is easy to understand why an operation performed on a scrofulous or anemic person will not generally be followed by results as happy and speedy as if the patient was healthy; but other points I purpose

discussing are of greater importance. By a series of experiments I have found specific results follow similar circumstances, that like produce like results. I have found the difference in results are due, not so much to the difference of temperaments and conditions of patients as to the manner of treatment.

These experiments have led me to reflect on various well-known surgical operations depending on pressure, such as dilating of strictures, and the ligation of tumors. The operation for removing a tumor by ligations frequently renewed, seemed to be regarded as depending on strangulating the blood-vessels or lacerating the tissues, and thus killing the tumor, so that finally the offending tissue will sluff away. Operations for correcting irregularities of the teeth have been too often based chiefly on the same principles, forcing them into position without regard to the injury of the surrounding tissues. This has appeared to me unscientific. I believe most of these operations should be founded on the physiological law to which I have alluded. To illustrate:

If a wooden wedge be gently forced between the teeth, there will be, for a few minutes, a slight sensation of pressure, but no pain; then this sensation will cease; if the wedge is gently advanced two or three times in twenty-four hours, a separation of the teeth without pain is the result. If a greater force short of causing pain is applied, a greater sensation of crowding is experienced, lasting longer, say an hour or two, and if repeated very often, or with too great force, pain will result. On the other hand, if an elastic rubber wedge is used in the same way, beginning with slight force, the sensation of crowding will be felt much longer, and will subside only after the force of the elasticity ceases. Sometimes this will continue for hours, or even days. The former illustrates the effects of intermittent pressure, the latter of continued pressure.

To give an extreme illustration: Suppose a flat gold ring as thin as paper should be placed round two teeth a short distance apart, the band being made to fit closely, but capable of being as easily put on the lid of a well-made box. The pressure of something foreign in the mouth would be felt, but no uncomfortable pressure; and if a wedge-band should be made that could be placed loosely around the teeth and tightened by wedges, and these should be carefully forced into the slots, say a thousandth part of an inch a day, there would be no sensation differing from that caused by the plain closed ring, because the pressure would be too slight to be recognized by the nerves. If this were repeated from day to day, the teeth would gradually approach each other, and in time would be in contact.

Should the force be increased daily, the time would come when a slight, but painless, dragging pressure would be experienced for a few minutes, when the wedge was applied, and then it would cease. If, however, it should be a continual force that was thus increased, the sensation would become unpleasant, and in time would amount to actual pain. This might be carried to an intensity, till the pain would be excruciating. Instead of wedges for tightening the bands, a screw may be used, connecting the ends of the metal ribbon by means of nuts, this force is more easily used and controlled, with the same result of painless movement. But if, instead of this band thus brought together by nuts and threads, elastic rubber should be used, the pressure would be kept up, and pain in proportion to the pressure. To explain why this difference of sensation occurs and how to take advantage of the knowledge of the laws governing them, so as to insure patients against suffering while regulating teeth, is one of my principal aims.

Irregular teeth are corrected by altering the shape and other conditions of the sockets. The system this book is designed especially to urge, largely consists in the observance of physiological principles, and the use of appliances which will best bring about this alteration, so as to cause the highest rate of motion of the teeth with the least pain, by operating on the socket tissues, within the laws of physiological functions. Persons who think brute force embodies the science of regulating teeth maintain that physiological acts cannot be sufficiently understood to permit the handling of teeth in this scientific way, but I believe the reader who intelligently follows me through these pages will be convinced that they can.

HARRIS' DICTIONARY OF DENTAL SCIENCE.

This is an old standby. More than forty years ago we studied it pretty thoroughly, and yet by repeated improvements since, it is still the foremost dictionary of our profession. This last, the fifth edition, is hardly as large as any of its predecessors, and yet it is much the best, for it is weeded of obsolete and irrelevant terms, and embraces hundreds of fresh dental words and subjects never before seen in a dental dictionary. We predict for it a large sale. P. Blakiston, Son & Co., Philadelphia. The price is not given.

This mention of a dental dictionary reminds us how we used to become familiar with the meaning of its strange words, that I think is worth imitating by those who may have as poor memory as we have. We would take at least two pages a day in their order, and include in practical sentences unfamiliar terms. Thus, for instance:

More fatal than abactus vinter is unskilful abaptiston, for this

may, indeed, admit of abarticulation and abasia for a time, but may produce abalienation, leaving the patient aphonia, and finally as bad as acephalous. Almost as bad is that aberration or abduction that produces irritatio then abiritation and abosis.

Then, to see how our sentence would look in plain English, and to still further familiarize ourself with the terms, we would translate it thus:

More fatal than abortion produced by artificial means is unskilful trepanning, for this may, indeed, admit of articulation with manifest motion, and inco-ordination in walking, for a time, but may produce a failing of the senses, leaving the patient voiceless, and finally as bad as headless. Almost as bad is that wandering or separation of the nerves that produces irritation followed by debility and death.

Construction of sentences in this way will be at first difficult, and you will make laughable mistakes, but gradually it will be fun, and you will run over three or four pages a day as a pastime, and the meaning of the terms brought into this novel use will generally stick by you, especially if they and their interpretation are written in a book, and occasionally re-read.

CATCHING'S COMPENDIUM.

These condensed gleanings of the important thoughts thrown out by dental writers in the magazines of 1890, is a valuable volume. It is the first venture of the kind ever attempted, but it is sure not to be the last, for it is taking the pearls from the sand; the gold nuggets from the river beds; the best thoughts from the mass of ideas thrown out by the profession. The great skill in the author of such a book is to know what not to select, as well as in putting in convenient and attractive form what is good; Dr. Catching has done this with rare ability.

We would like to state the price, but this is not given. B. H. Catching, Atlanta, Ga., also sold by Wilmington Dental M'f'g Co.

DENTAL LABORATORY, by Dr. T. F. Chupein, is a treatise for students that is worth studying. Dr. Chupein is a man of experience as a worker and a writer. He has been for some time editor of the *Office and Laboratory*, published by Johnson & Lund, Philadelphia, who also publish this book. It takes in the whole field of gold and silver dentures, gold crown work, and vulcanite.

P. Blackiston, Son & Co.'s Physicians' Visiting List for 1891, is the fortieth issue. Their long experience has given them unusual facilities for making it complete. It is undoubtedly the most convenient and popular visiting list extant. P. Blakiston, Son & Co., 1012 Walnut street, Phila., Pa.

DENTAL PROTECTIVE ASSOCIATION.

The second annual meeting of the Dental Protective Association of the United States was held at the Grand Pacific Hotel, Chicago, December 16th, 1890. The President, Dr. Crouse, called the meeting to order, and spoke as follows:.

Our second year closes full of encouragement. Last year, at our first annual meeting, we had represented, in person and by proxy, 648 members. This, our second annual meeting, is represented by nearly 1500 members, showing that the membership has more than doubled during the year.

We have driven the Tooth Crown Company from Milwaukee, where they commenced suits against five members. Our attorneys entered a motion, asking the court to set and limit the time when all the testimony should be presented by the Crown Company. After hearing the arguments of the counsel on both sides, the court limited the time to twenty days, and before it was up the Tooth Crown Company withdrew all the suits at their own cost. A similar motion in Baltimore, where six of our members had been sued, and we had taken charge of their suits, caused the Crown Company to withdraw all these suits at their own cost. This demonstrates the correctness of what we have all along claimed, that the International Tooth Crown Company did not dare to enter into a fair contest as to the validity of their patents.

They have now commenced suits in New York, and answers will be filed in due time. We accept licensees on same terms as others, and afford them the same protection, with the exception of a few licensees located in a very limited portion of the country.

The committee reported that after a careful examination of the management and accounts of the Protective Association of the United States, for the year to date, they have come to the conclusion that it is being managed carefully, economically, and with good judgment; that the chairman has given much time and money to the work, including attendance on several dental meetings, in the interest of the Association, and has devoted much time and labor to organizing the profession, and attending to its litigation, "and that he has done all this entirely at his own expense, and without one dollar of cost to the Association."

The entire office expense of the Association for the year amounts to two hundred and forty dollars for clerical help.

Friend Crouse has done a noble work, worthy of all commendation. The profession cannot do less than respond liberally by

seconding his efforts. And this does not mean any philanthropic response, but gifts are asked, and self-interest should prompt every respectable dentist to send in his ten dollars and thus secure protection in case of prosecution. This cannot be had after prosecution has been commenced.

WHEREAS, Dr. J. N. Crouse, of Chicago, Ill., the Chairman of the Dental Protective Association of the United States, is personally known by the president and other members of the San Francisco Dental Association to be an honest, earnest, and enthusiastic worker for the good of the profession; therefore be it

Resolved, That this Association indorse the methods of Dr. Crouse in conducting the Dental Protective Association, and strongly urge every dentist of the Pacific coast to become a member of said Association.

THOS. J. INGLEHART, *President.*
CHAS. E. POST, *Recording Secretary.*

EDITOR ITEMS:—The dentists of our city have organized a local society, to be known as The Isaac Knapp Dental Coterie of Fort Wayne. The officers elected for the ensuing term were S. B. Hartman, A.M., D.D.S., President, and M. A. Mason, D.D.S., Secretary.

The coterie meets the first and third Tuesday evenings of each month. *M. A. Mason, D.D.S., Secretary.*

Fort Wayne, Ind., February 5th, 1891.

VERMONT STATE DENTAL SOCIETY.—The fifteenth annual meeting of the Vermont State Dental Society will be held at the "Bates House," Rutland, Vt., Wednesday, March 18th, continuing three days. A cordial invitation is extended to all members of the profession to be present. *Thos. Mound, Secretary, Rutland, Vt.*

The twentieth annual meeting of the Kansas State Dental Association will be held at Wichita, Tuesday, April 28th, continuing four days. All are very cordially invited to meet with us.

C. E. Esterly, Secretary, Lawrence, Kan.

Will every graduate of the Kansas City Dental College send present address to J. P. Root, Kansas City, Kansas.

Object: Organization of Alumni Association.

J. P. Root, Kansas City.

Current Notes and Items.

Dull instruments and stupid operators always lack an attractive polish.

The honest, conscientious dentist may prosper slowly, but he is sure "to get there."

Clean instruments and clean hands contribute to a delightful harmony around the operating chair.

"Dr. W. H. Dwinelle," says Professor Frank Abbott, "has done more for dentistry in this country than any man now living."

Dr. Norman W. Kingsley is reported to have said that "there are thirty thousand dentists in this country." We would like to know the doctor's authority for this statement. We think fifteen thousand a safer number.

"The seeker after truth," says the editor of the *International*, 'needs no incentive but the value of results." The history of all truly great men gives emphasis to this declaration.

"Text-book teaching," says Dr. W. H. Atkinson, "has been accepted and found false." Not as a rule, doctor. The trouble is, our early writers copied too literally from medical authorities.

There are thirty dental colleges in active operation in the United States. Twenty of these are represented in the National Association of Dental Faculties. From these thirty nine hundred and sixty-three graduated last year. The total number of graduates during the past four years is three thousand six hundred and five.

There are between ninety and one hundred dental societies in the United States, with an aggregate membership of between three and four thousand. These societies are known as national, semi-national, international, state, local, county, and city.

Glycerine is recommended "to counteract the effects of carbolic acid on the mucous membrane of the mouth. It is much pleasanter than vinegar, and fully as potent. Take a pellet of absorbent cotton in the foil-pliers and dip in glycerine and apply, and, presto! the white spot is gone like magic."

One of the most remarkable surgical operations ever attempted was performed last month at the Charity Hospital, on Blackwell's Island. A portion of a living dog's foreleg was engrafted into a

boy's leg to take the place of the bone that was lacking. When the process is over it will be interesting to know whether the boy or the dog runs that leg.

Dr. Bilroth, the great surgeon of Vienna, and perhaps unsurpassed in rank in the world, as the result of a career of many years, in which every branch of medical science that he has touched has been promoted, says: "The colossal increase of nerve and mind disease in our day is undoubtedly the result, to a great extent, of the tobacco and alcohol habits, and the straining of the ner vous system caused by these poisons."

Dr. C. N. Peirce, chairman of the Section on Dental Education, Literature and Nomenclature, in his report to the American Dental Association, says: "One's knowledge of dentistry depends not only on his familiarity with the materials used, but also on the knowledge possessed of the tissues or organs on which the operations are performed."

Jno. C. McCoy, D.D.S., of Santa Ana, Cal., in a paper read before the Southern California Odontological Society, says of the State Board of Dental Examiners: "The position of this board is unique, it probably being the only one in the United States opposed to the better education of dental practitioners." * * * * "They have not only failed to fulfil their mission, but have been and are obstructionists, and have prevented the very thing they were appointed to promote." This is a serious charge, and, if true, demands immediate practical attention.

The Scepter Life Association has been in existence for a quarter of a century, and publishes its results for the five years ending December 18th, 1888. In the General Section, which included moderate drinkers, 67,000 lives were insured; in the Abstinence, 4,527. In the General Section the actual deaths constituted 76 per cent of the deaths expected, according to the British actuary's tables. In the Abstinence Section the actual deaths were only 57 per cent of the deaths expected. The advantage in favor of total abstinence is very marked, as it always is.

The electrical instrument recently invented for avoiding the pain incident to the extraction of teeth has attracted considerable attention. Briefly, it consists of adjustable prongs, carrying buttons and connected with an electrical battery. The buttons are placed on the face over the nerves leading from the teeth to the brain,

and a circuit is established the moment the extracting instrument touches the tooth.

We operated in this way thirty odd years ago, but found the shock so often disagreeable, we abandoned it.

Captain Allan Baker, of South Yarmouth, Iowa, who has had repeated hemorrhages from the lungs for the past two months, felt a scraping sensation in his right lung during a hemorrhage, and shortly afterward the root of a tooth was thrown off his lungs.

The only explanation Captain Baker can give of the occurrence is that, ten years ago he had a number of teeth extracted under the influence of anesthetics, and he thinks he must have swallowed one. The attending physicians say that the tooth may have been encysted in the lung for several years.

The root was one-eighth of an inch long, and shows evidence of nature's attempt to absorb it.

The capping of pulps is a very live question just now with the profession. At a late meeting of the American Dental Association the subject was ably handled by many of the advocates and opponents of the principle. Among the speakers was Doctor Story, of Texas, who said: "Dr. Crouse lives in Chicago and I live in Texas; he can save pulps in Chicago but I can't do it in Texas; I don't practice dentisty to make trouble for my patients or myself either. I have from two to three funerals in my office every week." Two or three funerals a week! And undertaker's bills to liquidate, of course! Well, if this isn't a grave matter we don't know what is. No hope for the departed, eh, doctor?

The journal of William Maclay, Senator from Pennsylvania in the Congress from 1787 to 1791, is about to be published. Miss Jeanette L. Gilder, editor of the *Critic*, in a letter to the *Chicago Tribune*, gives some advance extracts. One passage describing General Washington and Senator Maclay, says "His voice is hollow and indistinct, owing, as I believe, to artificial teeth." On this Miss Gilder says the plate or frame work which held the teeth in his mouth was made of iron, and was sent to the New York Loan Exhibition in aid of the Washington Memorial Arch, but was deemed by the committee too horrible to display; so they locked it up in a safe. She says that none could have dreamed what it was unless it had been labeled; that she thought it was a colonial rat-trap. Now teeth are made so perfectly that a lady won a husband partly by her beautiful teeth, and after living with him happily for fifteen years she told him upon her death-bed that they were false.

Editorial.

PHONETICS IN KOREA.

Even the half-civilized Koreans are outstripping us in phonetics. Though they are but just emerging from heathenism, they have developed a phonetic alphabet which enables any person, even the illiterate, to learn to read in a few days. This may seem incredible to us, who have to spend years in learning to read. We are incredulous because we are so far behind these Koreans,—we are ignorant of the true philosophy of expressing words by letters. Though we English-speaking people are civilized in many things, we are groping in heathen darkness in our stumbling, limping, blundering labor of spelling our words. We have become so accustomed to it that, like the aboriginies of Africa, with their crude languages, we resist improvement, as though some one was taking away our idols.

Among these Koreans, who, twenty-five years ago, had no written language, nearly all can now read. Their writing is so beautifully and correctly phonetic, that it is generally impossible to mispronounce that which is written; or to misspell any word they know how to pronounce. So it would be with us, if we would follow their example. But as it is, there are not fifty of us in a hundred, even of mature age, who can read; and not one in a thousand who can spell the words we use.

What a shame! How humiliating that we should be so far behind even these Koreans. But, instead of being mortified at our ignorance and stupidity, our immaturity and crudity in expressing our words,—instead of overcoming our defects and prejudices, with a manly desire to do better, we hug to our bosom the toys and absurdities of our national childhood, and strut about in the long dresses of our infancy. This we call dignity! All other nations of the earth, the heathens themselves, laugh at our imbecile and grotesque appearance. Even these Koreans offer us a beautiful new dress for our old clothes, but we prefer our rags, just

because they belonged to our ancestors. If any one attempts to better our condition, he is ridiculed as a crank.

Thus the best and richest language on earth is handicapped. A language that, if clothed in phonetics, would be the favorite everywhere, is so weighted with this rubbish of the middle ages that foreigners learn it with difficulty, and our own children waste years in mastering its syllabic expressions.

All this confusion and mortification and disgrace could be easily overcome. We use only forty elementary sounds in the English language, and even this is a larger number than any other language in use. There are only about fifty in all languages. Therefore, by adding a few more letters to our present imperfect alphabet, and have each character represent a distinct sound, we should have all that is necessary to write phonetically. If one-fourth or one-eighth or one-tenth of the editors of our newspapers and magazines would adopt such an alphabet, or even if they would spell as well as they could with our present bungling alphabet, in ten years phonetics would triumph; for phonetics is simply representing each elemental sound of a language by a fixed letter, and using in each word letters representing its sounds.

A STRIKING CONTRAST.

Much has been said in daily prints of late about the two metals platina and aluminum, the former the heaviest known, the latter the lightest. It is a striking and peculiar fact, that while the heavier metal has been steadily advancing in price, the lighter has just as steadily been receding, and that electricity is responsible for both.

By means of electricity, the process of eliminating aluminum from clay and corundum has been so cheapened it can be produced, as is estimated by some, for less than fifty cents per pound, as compared with $20 per pound, a few years ago.

The use of electricity for incandescent electric lighting, has so materially increased the demand for platina, that with no new sources of supply for the metal developing, its cost has increased in the same period from a few dollars per ounce to over $20.

Aluminum is a constituent element of all clays, and surrounds us on every hand; but economical means of obtaining it have never existed till the advent of electricity.

Platina is found principally in the Ural mountains in Russia, is difficult of access, and the mining of it is under control of the Russian government.

Few persons appreciate the great commercial value of these two metals. Aluminum, because of its cost in the past, has not been extensively available in the arts, though its adaptability to innumerable uses has been generally recognized. At a reduced cost, it is destined to revolutionize many departments of manufacture—the supplanting of copper in our telegraph system, as it is even a better conductor of the mysterious fluid; for the construction of ocean fleets; for decorative art; and as an alloy in the great ordnance of the world, experiments in this direction are now being made on a great gun, with a range of fifteen miles, which is to be finished within six months and tried at Annapolis. Endless, in fact, are the uses to which it may be applied in its purity and alloyed with other metals, when produced at sufficiently reasonable cost. It is a substitute for platina for stills and pans in the manufacture and use of most acids.

The oldest use of platina is in the scientific world, where it has served a useful purpose in many delicate experiments contemplating excessive degrees of heat; for the making of stills, in which acids are manufactured, some weighing 3,000 ounces, and worth, at the present price of platina, $60,000.

For some years it was part of the coinage of Russia, though long since withdrawn from circulation. It has held a position of some consequence in the jewelers' art, but till the introduction of the incandescent light, by far the most important use of platina, at least in the United States, has been in dentistry. No substitute has yet been found to take its place for the pins or rivets in twenty million or more of porcelain teeth that are annually produced in the city of Philadelphia alone, and distributed to every part of the globe. In fact, all the principal manufacturers of porcelain teeth in the United States, with the exception of The Wil-

mington Dental Manufacturing Company, have their factories in Philadelphia.

The extraordinary advance of several hundred per cent in price of platina, which constitutes by far the largest element of cost in the manufacture of teeth, has necessitated a very material increase in their cost; and the nearly twenty thousand dentists in this country have been, as a consequence, obliged to make a corresponding advance to their patients, who are compelled to wear the artificial substitutes.

Much ado has been made by the free-trade press of the country about the extortionate advance in the charges of the dental profession for these necessaries of life, as they are now regarded, and the McKinley bill has been held responsible, because, as a coincidence, the manufacturers were compelled to announce an advance in price of teeth during the time this bill was pending; when, in reality, it had no more bearing on the subject than the dog days do to geometry.

MANIPULATING OXYPHOSPHATE.

In making oxyphosphate fillings, some manipulate it too much, especially, by working it in the fingers after it has been mixed on the slab. Neither should it be mixed very stiffly. If it is mixed quickly and left a little sticky, then pressed immediately into the cavity and shaped as a finished filling without after-disturbance, it will become very hard and glossy, and will adhere to the walls of the cavity. This adherence can be increased by rubbing the walls of the cavity, before inserting the filling, with a pledget of cotton slightly moistened with the acid. The surface should not be smoothed while soft by a cloth or strip, nor by an instrument while it is hardening, nor by a file after it has hardened; all the shaping, smoothing and finishing should be done quickly by a thin burnisher, slightly covered with oil. As soon as this is done and the gloss comes on the surface, cover it with a coating of chloro-percha. When this is dry, cut away the dam, and not draw it over the chloro-percha.

KEEP UP.

There is probably no employment, just now, where thoughtfulness, thoroughness and an inventive genius are better rewarded than in our profession. The dentist who does not continually improve is quickly left behind, and buried beneath cast-off rubbish. He may as well consider himself dead as to be longer trampled under the passing procession. The time was, when any tinker could maintain himself in some sort of a way, by being recognized by the riff-raff of society. But now the profession is advancing so rapidly in dignity, learning, discipline and skill, and are looked on nearly every where with such deference, that ignorant charlatans are fast losing their hold on communities. There is no State in the Union that is not enacting laws, and maintaining for the dental profession a position of respectability, that preclude the possibility of ignorant adventurers longer misrepresenting and disgracing our calling. Those that are in must go, and those that would come in are legally excluded. We are becoming emphatically a learned profession, in which it requires the mastery of a large field of knowledge, a severe discipline of mind and muscle, and a suavity and adaptability that is exceptional. And the standard is still rising, so that soon it will also require gentlemanly conduct, clean habits, and moral integrity. Even skill will not shield the uncouth and vulgar, and learning will not compensate for disgust and uncongeniality.

THE NEW FOUND NICKEL AND PLATINA.

Dr. W. Adams, of Whitby, Ont., who sends us the article on this subject on another page, accompanies it with the following remarks:

Like the visit of the Queen of Sheba to King Solomon, the half has not been told in this article. The recent experiments with nickel-steel, and the fact that there exists equally wonderful deposits of the purest iron near by, will, in the near future, give Canada control of the steel products of the world.

I may just mention one fact in regard to the nickel deposit, that is worthy of note. A diamond drill is now down over two hundred feet in one of these mines, and has not passed through the ore. No wonder the steel producers of the world are in a state of ferment.

A GASOLINE BLOW-PIPE may be made by using a two-quart bottle with a large mouth, with a rubber stopper, having two holes through which to pass two glass tubes. A bottle that may be procured at a dental depot, sold as a wash bottle in making nitrous oxid gas, is the best. One of these glass tubes should extend nearly to the bottom of the bottle, the other merely through the stopper. Now attach to each tube about four feet of rubber tubing, having on one of them two inches of glass tube for a mouth-piece, and to the other a blow-pipe. Fill the bottle half full of gasoline, and after placing the stopper well in place, blow through the tube having the mouth-piece which is attached to the tube extending nearly to the bottom of the bottle. In this manner the air above the gasoline is saturated with the gas of the gasoline, and if the blow-pipe nozzle is open, this gas is blown out with considerable force, and if ignited, produces an intense heat. Of course, the size of the flame is gaged by the size of the nozzle. A foot-blower is of great advantage.

There are few men who can do well in attending to many and diverse occupations at the same time. We have heard of a few. Dr. Hayhurst, of this State, one of the most prominent and intelligent workers in the profession for the last fifty years, is one of them. For twenty years, besides his vocation as dentist, he has had the avocations of trustee of banks and various other institutions, surveyor, city councilman, preacher, and leader in many financial and social enterprises; and he is respected and successful in all.

We have just received a card from a local paper out West that reminds us of this, though indicating a variety of pursuits quite different, and which it would not do for many to imitate. "Stick to your last, my boy," is generally good advice:

Though interested in several outside branches of business, and employing a number of men and teams all the time, winter and summer, I myself attend to my dental work during business hours just the same, and can be found at my office by those in need of dental work, green wood, logs or sidewalks. *J. F. Sneathen.*

Miscellaneous.

PROGRESS IN ALUMINUM.

Since 1885 the efforts made to cheapen the cost of aluminum have been especially earnest among the metallurgists and chemists, both in this country and abroad. In this work Mr. H. Y. Castner, of New York, and Messrs. Cowles, of the Cowles Electric Smelting and Aluminum Company, of Cleveland, O., and Lockport, N. Y., have been especially active, a 500 horse-power dynamo having been erected at the latter place for the aluminum manufacture in 1886. And yet so difficult has been its production that five years ago its price was quoted in troy ounces at from 75 cents to $1.25 per ounce, although within the past year or two it has been sold at $3 to $4.50 per pound. Now, however, Mr. Eugene A. Cowles claims to have discovered a new process for the cheap extraction of this meta from common clay. According to the New York *Times*, he says:

We now expect to offer a pure metal made by a new process that is radically different from anything yet known to metallurgists—a process that is ridicuously simple in operation and almost theoretically perfect. By reason of two chemical discoveries it is found that the pure metal can be extracted direct from the clay. This can be done without the use of electrical heat. When operated on as large a scale as that on which iron is produced, aluminum will be produced at a cost permitting it to sell at $200 per ton, a price less than the present price of copper. Alterations will be made immediately in our works at Lockport to make the metal on a large scale. Capitalists in New York are preparing to build immense new works of probably twenty times the capacity of the Lockport works. One of the largest plants will undoubtedly be at Niagara Falls, where 10,000 to 12,000 horse-power will be required to operate it.

It is to be hoped that these expectations will be realized, and if so, aluminum is likely soon to occupy a highly important position in the arts, some of which it probably will revolutionize.

The metal has a specific gravity of 2.58; a cubic foot of silver weighing four times as much, and a cubic foot of iron or steel three times as much as a cubic foot of aluminum. It is of sensibly the same color as silver, oxidizes but slightly in air, water has no action on it, nor is it attacked by nitric acid or dilute sulphuric acid or sulphureted hydrogen. From its extreme lightness, strength, and resistance to tarnish, it is used to a considerable extent in the manufacture of dental, surgical, optical, electrical and scientific instruments of various kinds. It is very malleable and ductile, and may be readily beaten and rolled into thin sheets or drawn into fine wire. It melts at a temperature higher than that of zinc and lower than that of silver, has a tensile strength of 25,000 to 30,000 pounds per square inch. Among its uses heretofore have been as an alloy of copper, making aluminum bronze, also in small percentages as an alloy of iron and steel, with remarkable advantages.

A teaspoonful of finely powdered charcoal in half a glass of warm water gives marked relief in sick headache, by absorbing the gases produced by the fermentation of undigested food.

THE USE OF WATER AT MEALS.

Opinions differ as to the effect of the free ingestion of water at meal times, but the view most generally received is probably that it dilutes the gastric juice and so retards digestion. Apart from the fact that a moderate delay in the process is by no means a disadvantage, as Sir William Roberts has shown in his explanation of the popularity of tea and coffee, it is more than doubtful whether any such effect is in reality produced. When ingested during meals, water may do good by washing out the digested food and by exposing the undigested part more thoroughly to the action of the digestive ferments. Pepsin is a catalytic body, and a given quantity will work almost indefinitely, provided the peptones are removed as they are formed. The good effect of water drunk freely before meals has, however, another beneficial result—it washes away the mucus which is secreted by the mucous membrane during the intervals of repose, and favor persistalsis of the whole alimentary tract. The membrane thus cleansed is in a much better condition to receive food and convert it into soluble compounds. The accumulation of mucus is especially well marked in the morning, when the gastric walls are covered with a thick, tenacious layer. Food entering the stomach at this time will become covered with this tenacious coating, which for a time protects it from the gastric ferments, and so retards digestion. The tubular contracted stomach, with its puckered mucous lining and viscid contents, a normal condition in the morning before breakfast, is not suitable to receive food. Exercise before partaking of a meal stimulates the circulation of the blood and facilitates the flow of blood through the vessels. A glass of water washes out the mucus, partially distends the stomach, wakes up peristalsis, and prepares the alimentary canal for the morning meal. Observation has shown that non-irritating liquids pass through the "tubular" stomach, and even if food be present, they only mix with it to a slight extent. According to Dr. Leuf, who has made this subject a special study, cold water should be given to persons who have sufficient vitality to react, and hot water to others. In chronic gastric catarrh it is extremely beneficial to drink warm or hot water before meals. —*British Medical Journal.*

Coffee Inebriates.—The Germans are notable coffee drinkers, and it would seem as though some of them had carried their fondness for that beverage to a dangerous limit. A Prussian physician named Mendel has published in Berlin an essay on Coffee Inebriety. His observations were confined to the working population. He found that large numbers of women consumed over a pound a week, and some men considerable more, besides beer and wine. The leading symptoms were profound depression of spirits and frequent headaches, with insomnia. A strong dose of coffee would relieve this for a time, then it would return. The muscles would become weak and trembling, and the hands would tremble when at rest. An increasing aversion to labor and any steady work was noticeable, the heart's action was rapid, irregular, and palpitatious, and a

heavy feeling in the precordial region was present, also dyspepsia of an extreme nervous type. The symptoms constantly grow worse, and are only relieved by large quantities of coffee, generally of the infusion; in some cases the tincture was used. The victims suffer so seriously that they dare not abandon it from fear of death. When brandy is taken only temporary relief follows. The face becomes sallow and the hands and feet cold, and an expression of dread and agony settles over the countenance, only relieved by using strong doses of coffee. Melancholia and hysteria are present in all cases. Happily in this country the average housekeepers and cooks are so incapable of preparing coffee there is little danger of becoming so inordinately fond of it.

EFFECT OF CLIMATE ON FACIAL EXPRESSION.

One Side of the Picture.—A student of American social characteristics said to me yesterday: "Observe the lines of care in nearly every American face. Between the eye-brows of nearly every woman beyond twenty-five you see a line. There is something in the climate which produces an intensity of nervous energy and mental excitement. The faces of Americans grow year by year more and more angular, and the direct evidence of this is shown in a curious illustration given me the other day by a prominent New York dentist. He said he had observed the jaws of his patients becoming more and more contracted as the years went on, and that the teeth of the people he treated were more and more crowded together. The superiority of American dentists, of their having more difficulties to overcome in treating jaws and overcrowded teeth. In Europe, the faces are broader and the teeth are often wide apart." —*T. C. Crawford, in New York Tribune.*

HOPE FOR THE BALD-HEADED.

If there are no living hair papilla left there is no hope; if there are, this is easily ascertained by looking at the bald-head through a magnifying glass. In nearly every instance, minute hair papilla will be seen all over the baldness. If so, what is to be done?

Now, don't laugh, nor turn away in disgust, as Naman did because Elisha did not prescribe some great thing for his leprosy. *It's only an onion.* And you have not even the trouble of cooking it. Just cut it in halves, and rub the head vigorously with both of them, till you get up a good hearty stimulation. Do this each night before retiring, putting on a cloth night cap to increase the effect. In a month you will find fine fuze, or new hair, coming out all over where there was baldness, and this will grow into a good head of hair.

We have not tried it; but this is what an old gentleman told us, and he was an intelligent old gentleman, who assured us he had succeeded with it on his own head and on the heads of many others.